

ELIMINATING THE DIVISION IN FAVOR OF A GROUP-BASED FORCE STRUCTURE: SHOULD THE U.S. ARMY BREAK THE PHALANX?

**A MONOGRAPH
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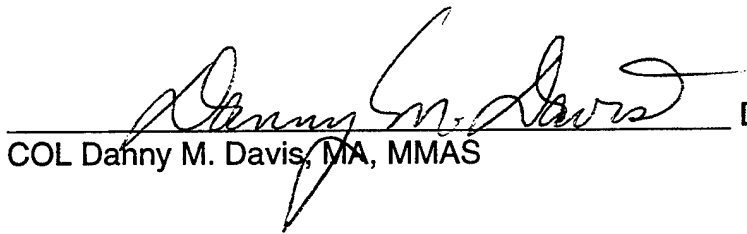
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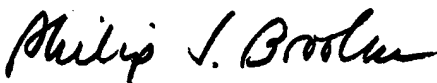
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ABSTRACT

ELIMINATING THE DIVISION IN FAVOR OF A GROUP-BASED FORCE STRUCTURE: SHOULD THE U.S. ARMY BREAK THE PHALANX? By MAJ John M. Spiszer, USA, 89 pages.

The purpose of this monograph is to consider the proposal put forth in Douglas A. Macgregor's study *Breaking the Phalanx: A New Design for Landpower in the 21st Century*. In short, the paper's research question asks, *should the Army adopt a Macgregor-style group-based force structure during the next decade or maintain the current Army thrust line?* This means attempting to determine if the Army should eliminate the divisional echelon and make a group and corps/joint task force structure the force building blocks of the future.

In answering this question the following approach is used:

First, the author explains the background and significance of the problem and provides a set of criteria which will be used in making determinations concerning future force structure decisions. The criteria are interoperability, deployability, efficiency, commandability, lethality, agility, and versatility.

Second, the paper presents the major components of Macgregor's proposal and maps out the Army's current direction. This section of the paper answers the subordinate research question: *What are the major force structure alternatives and how do they differ?*

Third, the paper examines two recent operations, Operations DESERT SHIELD/DESERT STORM and UPHOLD DEMOCRACY. This answers a second subordinate research question: *What lessons or possibilities pertinent to the force structure decision have been offered by recent combat operations?* This provides insights into the importance and characteristics of the traits selected as decision criteria and how they are manifested in actual operations.

Fourth, the paper defines the thrust of future warfighting requirements in terms of the established criteria. This answers the final subordinate research question: *What are the future warfighting requirements to which force design decisions must respond?* This provides insights into how the traits established as criteria are seen in the future and their relationship to this issue.

Last, based on the preceding discussion, the primary research question is answered (*Should the Army adopt a Macgregor-style group-based force structure during the next decade or maintain the current Army thrust line?*) through comparison and analysis of the two directions in light of the criteria.

The conclusion is that the Army should not adopt Macgregor's proposal. The current *Force XXI* process is working and should continue its efforts into the near future. However, the Army should examine modifying future force structure and *Force XXI* experimentation toward consideration of a group-type proposal.

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I. Introduction

The publication of Douglas A. Macgregor's study *Breaking the Phalanx: A New Design for Landpower in the 21st Century* has fueled debate both inside and outside the Army on whether the current azimuth of change is headed in the right direction and if the pace of change is sufficient.¹ This debate is based around a posited Information Age Revolution in Military Affairs (RMA). The supposed benefits of a RMA are not contingent on technological change alone, but reflect consequences of changed circumstances in global relationships. As Donald Kagan states in the Foreword to Macgregor's work, "True revolutions in military affairs depend on the reconfiguration of forces to meet new conditions, and they require new fighting doctrines."² Macgregor's position is that landpower dominance is crucial in the future and that the Army must do more to maintain this dominance. His proposal is designed as an interim one, intended to maximize the benefits of the ongoing technical and political RMA with the adoption of major organizational change. He argues this change enhances the technological improvements the Army is making and improves doctrine as it evolves.

However, if this proposal is as attractive and compelling as its author and others state, why is the Army not adopting it now?³ This monograph is an attempt to consider this proposal and what it means to the Army. In short, it asks, *should the Army adopt a Macgregor-style group-based force structure during the next decade or maintain the current Army thrust line?*

The conclusion is that the Army should not adopt Macgregor's proposal. The current *Force XXI* process is working and should continue its efforts into the near future. However, the Army should examine modifying future force structure and *Force XXI* experimentation toward a serious consideration of this issue.

Problem Background and Significance

Currently the Army's primary force building block is the division. It has remained so since World War II and today the division is the basic unit of allocation for both force structure and material allocation decisions.⁴ With U.S. roots reaching back to the Civil War, the division is an institutional icon, embedded in the bureaucratic system and thought processes of the Army. Today's ten active and eight reserve component divisions are sacred cows and represent significant interest group efforts to maintain the current designations in the force structure. History, popularity, familiarity, and utility all play a role.

Today, however, the Army is changing. The strategic environment has altered due to the fall of the Soviet Union and its echoing reverberations. While the Army's essential mission remains unchanged, the nature and frequency of its operations have changed and continue to change. Changes in technology, especially in computers, digitization, and precision munitions, and global fragmentation lead many to believe that we are in the throes of a RMA, one that will again modify the way nations wage war. That requires dramatic change in how the Army works.

Both analysts and military professionals have examined these largely technology led issues and many have developed visions of a future that demands both doctrinal and organizational change in the U.S. Army. These changes are necessary if the Army is to remain relevant and successful in executing its primary and secondary missions. The questions remain: How much change? How fast to change? When to change?

Current efforts focus on embedding the new technology in the existing force and adapting doctrine as part of the *Force XXI* process. Major organizational change is thus deferred.⁵ However, many commentators advocate making major organizational changes now. This, they argue, could assist in capitalizing on the new technology, in both the areas of information acquisition and management, and weapons lethality. It might also help the Army address manning deficiencies inherent in the current force. Eliminating an echelon of command can reduce fat and streamline operations.⁶ Linking organizational change to doctrinal and technological changes is also seen as the key to maximizing the potential advantages of a RMA.⁷ The benefits from such a move are espoused as many and compelling. Furthermore, today is seen as the time to make the change since there is little threat to the U.S. on the current strategic horizon.

The current debate has reached beyond the Army.⁸ Within the force, Macgregor's proposal is especially popular among mid-career officers. These appear more willing to accept change and feel that there is a greater need to

change. The thinking borders on embracing change for change's sake.⁹ This monograph will attempt to take a more unbiased and analytical approach.

Approach

Examining whether or not the Army should adopt a group-based force structure over the next decade means attempting to determine if the Army should eliminate the divisional echelon and make Macgregor's group and corps/joint task force (JTF) structure the force building blocks of the future. The first requirements are to explain the background and significance of the problem and provide a set of criteria that will be used in making judgments concerning future force structure decisions. The criteria are listed in the next sub-section and defined in Appendix 1.

Second, the paper must present the major components of Macgregor's proposal and map out the Army's current direction. The purpose here is to further structure and limit the scope of the issue under examination and provide a basis for comparison in Section V. The second section of the paper answers the subordinate research question: *What are the major force structure alternatives and how do they differ?*

Third, the paper examines two recent operations, Operations DESERT SHIELD/DESERT STORM and UPHOLD DEMOCRACY in terms of the selected criteria. The discussion of these operations answers a second subordinate research question: *What lessons or possibilities pertinent to the force structure decision have been offered by recent combat operations?* The purpose is to

provide insights into the importance and characteristics of the traits selected as decision criteria, as they have been manifested in recent operations, as well as to seek indications of future possibilities in the experience gained with developing systems.

Fourth, the paper attempts to define the thrust of future warfighting requirements in terms of the established criteria. This answers the final subordinate research question: *What are the future warfighting requirements to which force design decisions must respond?* The purpose is to provide insights into how the traits established as criteria are seen in the future and their potential impact on the current Army direction versus Macgregor's proposal.

Sections II through IV provide the basis for analysis and comparison of alternatives in Section V. Here the primary research question is answered (*Should the Army adopt a Macgregor-style group-based force structure during the next decade or maintain the current Army thrust line?*) through an examination of the alternatives in terms of the selected criteria in light of what was learned in the preceding sections. Finally, Section VI summarizes the key findings and provides the recommendation of this study.

Criteria

The criteria selected for use in examining possibilities demonstrated by recent combat experience, anticipating future warfighting demands, and finally analyzing force structure considerations in this monograph, include:

- Interoperability

- Deployability
- Efficiency
- Commandability
- Lethality
- Agility
- Versatility

(See Appendix 1 for definitions of these criteria and other related terms)

Together these characteristics set the standard for the force structure recommendation that this paper will make. Analysis of how well each proposal exhibits the traits concerning each of the criteria listed above will determine the key findings and conclusions in the paper's final section.

II. The Two Directions

Currently there is a great deal of debate concerning the general issue under examination in this paper. A clear understanding of the two alternatives, the Army's current vector of change and Colonel Macgregor's proposal, is necessary, especially in a paper of limited size and narrow scope. This provides a basis for comparison in Section V by answering the subordinate research question of : *What are the major force structure alternatives and how do they differ?*

There are almost as many brigade-based force structure proposals under consideration, or at least discussion, as there are thinkers in the Army. Not all

have merit and not all have been seriously thought out. A few of the many ideas include:

- The Brigade-Based Division, consisting of combined arms brigades; tactical and tailorable divisional headquarters; and deployable, operationally focused, joint corps.¹⁰
- Separate brigades, both special purpose and conventional designs, designed to meet requirements for Operations Other Than War (OOTW), reinforcing missions, etc.¹¹
- The Brigade-Based New Army Concept that bases the Army on brigades, or groups, similar to those in Colonel Macgregor's proposal, and eliminates the divisional echelon. This concept posits nine corps controlling six or seven brigades each, which essentially replace the divisional echelon.¹²
- The Modular Small-Base Division that retains much of today's structure, and places one each of a larger armor, mechanized, and light brigade (each brigade with an added cavalry squadron and more robust support battalion) into a correspondingly smaller and standardized divisional base.¹³

In total, this intellectual output has given the Army a great deal to consider. Colonel Macgregor's proposal, however, is one of the more comprehensive and controversial.

Macgregor's Proposal

Colonel Macgregor's proposal is intended to restructure the Army to maximize the benefits of the ongoing RMA and to best position the Army for the

future and continuing change. "Breaking the phalanx" refers to eliminating the sacred cow of the division, recognizing the strategic dominance of landpower, and having the courage to make major organizational change. As he states: "What the Army needs is a warfighting organization with a form that parallels the shift of warfighting functions and activities to progressively lower levels."¹⁴

The result of Macgregor's proposal is an intermediate digitized group structure with embedded, or organic, command, control, communications, computers, and intelligence (C4I) capabilities. There will be a total of 26 combat or maneuver groups in the force, each with a similar set of base capabilities. These capabilities include traditional command and control (C2) functions, joint augmentation, information warfare and attack assets, and combat support assets. While there are variations to the basic maneuver group structure, each combines battalions of C4I, indirect fire, combined arms or maneuver, reconnaissance, and support, into what is roughly a modernized separate brigade. These "groups" include various numbers (in parentheses) of four combat types, classed as: heavy combat (15), airborne-air assault (7), heavy recon-strike (2), and light recon-strike (2) structures. This structure eliminates the Army's light infantry units in their entirety. Supporting groups include: general support, engineer support, rocket artillery, theater high altitude air defense, "aviation strike", "aviation support", and C4I types that would be in general support of a Macgregor-style "corps".¹⁵

Macgregor proposes eliminating the divisional echelon. This results in an expanded group-level staff commanded by a brigadier general with a colonel as chief of staff (and probably a colonel as a deputy commander) and lieutenant colonels in all of the principal staff positions.¹⁶ It also results in an expanded corps headquarters that is modular and designed (structure and equipment) to control and participate in joint operations. This corps/JTF is commanded by a lieutenant general with three major general deputies. These deputies head staff sections/command posts organized around the functions of close combat, deep battle, and rear battle functions. The staff is augmented with other Service personnel, as necessary, to accomplish these and the joint requirements.¹⁷

Colonel Macgregor posits that this corps/JTF can "embrace a larger span of command and control than is currently possible in Army-pure divisions or corps."¹⁸ This is accomplished through the larger corps staff, especially the deputy commanders, that he proposes, and through the use of additional C4I groups or battalions to increase span of control capabilities, as required. However, he does not provide specifics on the actual numbers of groups a corps/JTF would or could control. One example Macgregor provides shows the corps/JTF structured with five combat groups and six support groups. The total number of corps-level headquarters remains at four.

The reasons and advantages for making this change are many and compelling to Colonel Macgregor and include the following:

- Capitalizing on the potential advantages a RMA can confer. In Macgregor's view exploiting information technology demands organizational change in line with technological advances and doctrinal innovation. These groups provide an intermediate and adaptive structure designed to accomplish this at the start of the current Information Age RMA. This leads readily to future advantages and change in the Army After Next (AAN).¹⁹

- Alleviating centralization and wastage of assets at the division/corps level and providing a versatile, flexible, and effective warfighting and OOTW capable unit at lower levels. Forces are organized for strategic responsiveness and are capable of dominating maneuver and precision strike.²⁰

- Embedding tactical mobility, digitization and joint C4I capabilities throughout the force.²¹

- Maximizing the efficiency of the force. Macgregor believes his structures make best use of a limited resource base. Elimination of the divisional echelon frees manpower spaces for redistribution across the operational force. Another benefit Macgregor identifies is lower operating and maintenance costs.²²

Macgregor advocates making this change as soon as possible. This is, to paraphrase the author, an option for change within the status quo. The group-based structure, in his view, best provides "a new organization for combat to conduct dominating maneuver within a joint operational framework" from the present through the year 2010.²³ This approach advocates immediate, rapid, and possibly revolutionary change.

Current Army Direction

The current Army direction, embodied in the *Force XXI* process, is evolutionary. Senior leaders do not hesitate to admit that there is a great deal of merit in the *Breaking the Phalanx* proposals, but see it fitting "somewhere between Army XXI, which will emerge from the *Force XXI* process at the end of the decade, and the Army After Next."²⁴ Whether overly conservative or not, the Army has chosen a more rigorous, lengthy, and seemingly continuous experimentation process prior to undertaking major organizational changes. The current azimuth, relevant to organizational Information Age warfare experimentation, was developed during a series of Training and Doctrine Command "How to Fight" Conferences held in 1995. The *Force XXI* Division Design Analysis: Phase I, in December 1995, examined four possible structural alternatives (although eleven alternatives were looked at in varying degrees of detail). The study was based within the context of TRADOC PAM 525-5, *Force XXI Operations*, considerations, and a subjective feasibility, acceptability, and suitability analysis. The decision to stick with a modernized Army of Excellence (AOE) Heavy Division as the interim division design for experimentation was based on a marginal superiority in objective and subjective analysis areas. All other proposals were deemed unacceptable, subjectively, at least at that time.²⁵

Subsequent refinement of the *Force XXI* process and the timeline to the AAN has continued. This has led to a reaffirmation of the current evolutionary, experimentation-based approach. The Army's overall Campaign Plan consists

of two phases. The first, to be accomplished between now and 2010, "reflects product improvements" and exploitation of technology with a simultaneous evolution of doctrine to "incorporate *Army XXI's* enhanced warfighting and situational awareness capabilities" essentially within the current structure. The second phase combines "leap-ahead technologies with doctrinal innovations and new organizational concepts... to produce a true RMA." This phase begins after 2010 and culminates in the AAN.²⁶

This approach does not rule out change that may ultimately lead to structures like those proposed by Macgregor. However, it maintains the current structure as the basis for experimentation at least until 2010. In the meantime the Army possesses a ten division combat force consisting of five heavy divisions with a total of fifteen heavy (armor or mechanized infantry) brigades, two light divisions with a total of six light brigades, an airborne division with three airborne brigades, an air assault division with three air assault brigades, and a mixed division with approximately two heavy and one air assault brigades. There is also both a heavy and light cavalry regiment. Each division consists of three brigades and a divisional base with aviation, artillery, engineer (for the heavy divisions), and support brigades, as well as air defense, engineer (for the other divisions), military intelligence, and signal battalions. The heavy division maneuver battalions are either pure armor or mechanized infantry. The division allocates and manages a common resource base and task organizes brigades based on mission requirements. As such the brigade is a flexible grouping of

units, which while habitually related for the most part, are in essence modular. Similarly corps, of which there are now four headquarters, do the same with echelon above division assets, mostly artillery, aviation, engineer, and support units that reinforce and support the divisions.

The changes foreseen concerning the basic divisional structure as *Force XXI* related experimentation continues are minimal at this time. First, the support, especially maintenance, functions are being consolidated out of the maneuver battalions and into the support battalions. Second, the number of companies in heavy maneuver battalions is being reduced from four to three. Third, the heavy division is reducing its strength from about 18,000 to just over 15,000. And, last, other changes in structure and equipment are ongoing internally to the division's battalions in order to best incorporate and exploit the new Information Age technology.²⁷ To date there remains no plan to depart from the current ten division force and its basic structure.²⁸ Furthermore, the changes arising from experimentation are going to be slow to implement due to resource limitations and the deliberate and cyclic approach of the *Force XXI* process. Changes to corps or echelons above division structure have yet to be examined seriously, but will be in the near future.

This approach ultimately produces a force that is part of a joint team, able to exploit Information Age technologies, and possessing streamlined headquarters. It is mobile, versatile, flexible, logistically unencumbered, fits into Joint Vision 2010, and trains the way it fights.²⁹ In short, it is a force with very similar

capabilities and characteristics as those advocated by Colonel Macgregor. Only the road to this goal is different. The Army's current road guarantees the force remains division-based at least through the year 2010. The achievement of these capabilities and characteristics is dependent upon technological and doctrinal changes at least until that time.

Thus, the major differences between the two approaches are largely a matter of timing. The elimination of the divisional echelon remains a possibility in the current Army direction, just not any time soon. While Macgregor focuses on accomplishing organizational change now to maximize efficiency and capitalize on the potential benefits inherent in a RMA, the Army's approach is slower, deferring any major restructuring. This approach is expected to provide great benefits too, but with less risk.

III. Historical Examples

For armies languishing in the somnolence of peace, the critical reading of the lessons of past wars is one of the most fruitful means of seriously preparing for future conflict.³⁰

This and the following section are devoted to an overview of lessons of recent operations and a projection of future requirements. Here the second subordinate research question is answered: *What lessons or possibilities pertinent to the force structure decision have been offered by recent combat operations?* The purpose is to provide insights into how the paper's selected criteria have been manifested during actual operations and how they relate to

U.S. Army force structure considerations. This provides a basis for analysis and comparison in Section V. The paper will focus on Operations DESERT SHIELD/DESERT STORM and UPHOLD DEMOCRACY. This analysis provides a look over the past decade and across the spectrum of conflict.³¹ The selected criteria for examination in this section include: interoperability, deployability, commandability, lethality, agility, and versatility.

Operation DESERT SHIELD/DESERT STORM³² (ODS)

This conflict is the only Mid-Intensity Conflict (MIC) in which the U.S. has participated since Vietnam. Many believe that it was the triumph and epitome of Industrial Age warfare. Others point to it as a vision of the future and Information Age warfare.³³ Either way the operation resulted in a decisive battlefield victory that is now the subject of extensive and exhaustive analysis. The Army has not sat on its laurels, but has determined many things of value to maintain, improve on, or fix.

One of the key lessons applicable to this study concerns interoperability (see Appendix 1). Interoperability was an issue both in the combined arena and within U.S. forces. ODS was a large scale coalition fight, a coalition established on an ad hoc basis that incorporated others than traditional U.S. allies. U.S. forces had to deal with "differences in equipment, training, and culture" and form an effective and efficient allied fighting force in minimum time.³⁴

In ODS potential problems of coalition force mismatch were minimized since the Arab forces remained separate from the U.S. ground forces. Furthermore,

those forces under the tactical control of U.S. corps, the British and French, coming from a common NATO background, were more similarly structured and possessed compatible doctrine making combined operations easier and more effective with these coalition partners.³⁵ It is doubtful that things will be so simple in the future, especially in a rapidly changing security environment.

Another point concerning interoperability is internal to U.S. ground forces. It was discovered in ODS that there was a technology gap in the capabilities of various forces, between Services and in the Army, especially between the "first to fight" and the follow-on forces deployed to the region.³⁶ Modernization initiatives had left some units behind and with a disadvantage in their ability to interoperate and perform with other U.S. Army units. This was particularly acute in units with and without Mobile Subscriber Equipment, the newest tactical radios, and the Bradley Fighting Vehicle (such as in the 197th Infantry Brigade attached to the 24th Infantry Division (Mechanized)). Interoperability requirements sacrificed the capabilities of the newer equipment, if workarounds were even possible. The reason for the material mismatch results from the fact that costs involved in acquisition prohibit other than lengthy procurement and fielding times, inevitably leading to a mix of modernized and less modernized forces that will have to work and fight together.

Deployability is the next issue (see Appendix 1). This is an obvious one and one that has been dealt with extensively in other forums. The bottom line is that deployment took a long time. In ODS the Army was blessed with six months to

complete an extensive and massive deployment of the forces necessary to fight. Such an opportunity is unlikely to occur in the future. This was recognized in the Mobility Requirements Study (MRS) conducted by the Defense Department following the conflict. The MRS provides a roadmap for improving the assets and infrastructure involved in strategic mobility.³⁷

Furthermore, despite the fact that extensive work in the area of strategic mobility has been accomplished since ODS, it remains expensive and difficult to deploy Army ground forces. Streamlining, proper tailoring or force packaging, lightening equipment, and capabilities enhancement and improvement are all areas that can pay dividends through building a force more ready and capable to deploy as a power projection force. A force structure, easier to deploy, with appropriate doctrine and capabilities is obviously needed. This issue is largely related to requirements for lift assets. However, force structuring remains a factor, albeit a minor one so long as additional lift assets can be found.

“Battlefield leadership at all levels is an element of combat power.”³⁸

“Commandability” which encompasses leadership and span of control (see Appendix 1) was also manifested in ODS. In ODS the practice of leadership at brigade and higher levels was dependent upon personal and forward-oriented command techniques. Commanders moved forward for three reasons: First, to see the battlefield and gain the feel of the battle for themselves; second, through their presence, to strengthen esprit and morale; and third, to communicate personally with their subordinate commanders.³⁹ This last was perhaps the most

important. It gave the commander the opportunity to impart his orders and intent in person, to ensure their understanding and to gauge subordinate commander's resolve and status.

The other side of this issue involves the number of major subordinate units a commander or headquarters can adequately command and control. This issue of span of control is an important one, because it ensures the application and synchronization of all available assets. If a commander's span of control is too large, the unit's performance will suffer due to insufficient direction. The doctrine in effect during ODS stated that a proper span of control was from two to five subordinate ground maneuver units, from the brigade through the corps level.⁴⁰ While current doctrine is not as definitive as this, it is commonly recognized that there is a maximum number of subordinates and subordinate units that a commander can adequately control. As today's Field Manual 71-3, *Armored and Mechanized Infantry Brigade* states: "If a commander is to be effective in a crisis, he must limit the number of voices he hears."⁴¹

This was a concern primarily at the higher levels during ODS. Both Corps Commanders and the Theater Commander had large spans of control. At the theater level this large span of control was exacerbated by General Schwarzkopf's decision to also be the U.S. land component commander.⁴² In the corps structures each commander controlled at least five major ground maneuver units, which does not include the aviation or artillery brigades. The VII Corps, in particular, controlled five divisions and one cavalry regiment. This

was the same as a requirement for the staff to track (two levels down) the planning, preparation, and execution of 23 brigade equivalents associated with the divisions and cavalry, plus another six other brigades of artillery, air defense artillery, and aviation at the corps level.⁴³ The resulting difficulties did, in fact, hamper VII Corps and its application of combat power in the ground war.

The issue of lethality was not a critical one in ODS except in the context of the Army's light forces.⁴⁴ The lethality of heavy forces was exceptional and is improving with *Force XXI* modernization initiatives. There was some uncertainty in ODS since many of the weapons systems were not proven in combat, but almost all systems performed well.⁴⁵ It is unlikely that heavy force lethality will be an issue any time soon, obviously the more systems in a force structure, the more lethal it will be (at least within the context of the span of control issue as well as the deployability requirement).

However, there was significant concern over the lethality of the 82nd Airborne Division, the first Army division deployed to defend Saudi Arabia. The Division's lack of mobility and lethality were issues in the early days of ODS and relegated the 82nd Airborne Division to a secondary role during the ground war. This issue continues to this day. There are significant capabilities and lethality differences between the Army's heavy and light forces. The light forces were developed largely with rapid deployment considerations in mind. These forces sacrifice a great deal of lethality, but remain the forces slated for early deployment.⁴⁶ In this circumstance, during the first months of ODS, there was

concern at the highest levels over the vulnerability of this “light” force facing a mid- to high-intensity opponent in terrain favoring mobile or maneuver warfare.⁴⁷

Furthermore, once the ground war started, the 82nd was given a minor role. No definitive reason is apparent, but the Division’s mission consisted of guarding lines of communications and supporting the French 6th Light Armored Division. They followed behind more mobile and lethal forces in trucks and/or buses. An airborne insertion was ruled out since “...isolated and relatively immobile once on the ground, the 82d would be difficult to support and sustain from the air alone. Airborne forces were ill-suited for warfare in open desert, particularly against mobile armored forces.”⁴⁸ This may not always be the case depending on the situations arising in the future, but remains a concern when balanced with the deployability issue.

Agility, one of the Army’s operational tenets, was demonstrated during ODS as a key characteristic of U.S. forces, one that was directly responsible for such an overwhelming victory in the ground war (see Appendix 1). U.S. forces were configured, equipped, and led in such a way that they were able to conduct operations and react faster to a rapidly changing situation than could the Iraqis. The agility of the Army came from its training, leader development, and equipment. Equipment that included communications and air/ground mobility assets as part of the physical component of the agility equation was essential. Forces that have greater mobility and abilities to communicate have a distinct physical advantage in gaining and using agility.⁴⁹ The appropriate force

structure and doctrine facilitated the Army's ability to exploit its agility and helped provide such a quick and decisive tactical victory.

Most of the criteria of concern in this monograph, except versatility and efficiency, manifested themselves in one form or another during ODS. Each provides insights related to force structure decisions and trade-offs for examination in Section V.

Operation UPHOLD DEMOCRACY (LIC and OOTW)

Operation UPHOLD DEMOCRACY is the Army's most recently completed OOTW mission. It demonstrates the ambiguity of such missions with some calling its outcome a success, and others calling it a failure.⁵⁰ Either way, it provides an example at the opposite end of the spectrum of conflict from ODS. This operation also provides insights into the characteristics of this study's criteria in one of the most recent of operations of another character than ODS. These criteria are those already discussed in this section, although seen from a somewhat different perspective.

The important capability of interoperability reared its head again in Operation UPHOLD DEMOCRACY. However, this capability not only included working with allies and with lesser modernized Army forces, but also with other Services, the United Nations, and civilians.⁵¹ While many of the issues involved in dealing with non-governmental organizations (NGOs), the United Nations, and other civilian organizations, are a matter of familiarity and training, the habitual

relationships between other Services and coalitions can still be impacted by force design, equipment, and structure.

First, Army forces had to work extensively with both Special Operations Forces and the Navy. The Navy provided assistance to the Army in three ways. First, they provided the U.S.S. *Mount Whitney* as the Joint Task Force (JTF) 180 headquarters. Second, they provided the Aircraft Carriers *America* and *Eisenhower* as staging bases for Army heliborne forces. Last, with the U.S. Coast Guard, they provided the Harbor Defense Command (HDC) responsible for port security.⁵² Again, many of these operations required training and familiarization, but the U.S.S. *Mount Whitney* was found to provide an excellent C4I platform, with minimal augmentation, for the JTF headquarters, providing the requisite capabilities for a joint force. There is no standing Army unit or facility that provides a similar plug-in capability.

Next, the Army's conventional forces in JTF 190 (based around the 10th Infantry Division (Light), (10th ID(L))) did not operate well with the Special Operations Forces (SOF) employed during the operation.⁵³ This was largely because the two forces are trained and led so differently, but also because the two forces are supported and controlled differently. SOF are generally provided support and direction through their own command channels making unity of effort difficult to attain. This was the case in Haiti. Conventional tactical forces, such as the 10th ID(L), are not structured to provide either support or control of SOF forces. This results in a general failure to operate well together. Despite a

common JTF headquarters, problems continued to manifest themselves at lower, tactical levels where conventional forces often found themselves co-located with or operating with SOF forces. There was no capability, liaison, or relationship that allowed the two types of forces, both operating in the same area and medium, to work well together.

In another area, however, the SOF facilitated interoperability by providing Coalition Support Teams (CST), that aided in the integration of the Caribbean Command Battalion. Based on lessons learned from ODS, the CSTs became semi-formalized organizations with an identifiable structure.⁵⁴ Interoperability problems were also minimized by employing these units in their own sector, where they had minimal contact with most U.S. forces.⁵⁵

In this operation the issue of commandability takes on a new perspective. Specifically there was a requirement for both an Army corps and division to be JTFs. The XVIII Airborne Corps was designated as JTF 180 and the 10th ID(L) became JTF 190 and the Army Forces headquarters (ARFOR). This did not prove to be an easy task for the Division. Specifically, a division is not organized, manned, or equipped to perform either mission, especially in the areas of C4I and logistics. A division requires substantial augmentation, training, and experience to assume such a role. Fortunately for the 10th ID(L) its experience in Somalia and the aid of the XVIIIth Airborne Corps and Atlantic Command helped immensely.⁵⁶ On the other hand, span of control did not

appear to be an issue. The force employed was not overly large for an augmented division structure.

Agility was also found to be an important capability of the force in an OOTW environment. First, from its physical side, both tactical mobility and communications were invaluable in maintaining the ability to act faster than the potential enemy and was a prerequisite to seizing and holding the initiative. In fact, this operation highlighted the fact that the Army's light forces are inadequately supplied with vehicles, requiring augmentation to perform the required mission.⁵⁷

As a mental quality agility was also important.⁵⁸ As one author put this requirement concerning the Haiti mission: "Rapidly changing circumstances imposed the unwelcome burden on Shelton [the JTF 180 Commander] to improvise new rules for the game as it was being played."⁵⁹ Furthermore, these operations are complex, unstable, chaotic, and essentially ambiguous; that for success, demand that U.S. forces stay one step ahead of their potential opponents.⁶⁰ In such a situation, any structural, doctrinal, or technological advantage is desired.

The last criteria necessary in the UPHOLD DEMOCRACY OOTW environment (as well as every other OOTW environment examined by this paper) is versatility. Operations in Haiti highlight this in two key respects. First, U.S. forces had to prepare for two initial entry and follow-on types of operations. Furthermore, they had to maintain their readiness to do either all the way up to

mission execution. The first mission involved a forced entry and forcible seizure of power by JTF 180. The second mission assumed a permissive entry and subsequent stability operation by JTF 190. The ability to perform either or both missions on short notice is a key example of the versatility of Army forces.⁶¹

The second example of versatility seems to be a negative one, but closer examination shows otherwise. Reaction to these OOTW missions often involves non-standard task organizations. However, such organizations are primarily organized around a divisional base, that, when deployed often take the majority of their C2 and support units, but leave behind many other units. The problem appears that these stay behind units are then unavailable while their parent unit and support assets are deployed, unless of course, they are preparing to reinforce or rotate into the existing mission.⁶² The organization deployed is usually such that a general officer headquarters ends up controlling one or two maneuver brigades and the requisite other types of units for JTF or ARFOR C4I and logistical support, as well as other special units to accomplish the mission. What appears to happen, in effect, is that most of a divisional base is used to perform a mission not requiring all of its major units, and these remaining units end up idle at home station and of little use for other contingency operations.⁶³

However, this is not necessarily the case. In fact, the ability to task organize or tailor forces and employ them in other than non-standard configurations, as has been done in virtually all OOTW operations in the past decade, is a key attribute of versatility. This continues today with the ongoing

Task Force Eagle mission in Bosnia. For the past two years many of the rotating headquarters' subordinate units, especially maneuver units, remained at home station in Germany. However, these units were not idle. Some of them were used as peacekeepers in Task Force Able Sentry in Macedonia and many others participated in numerous military to military and Partnership for Peace exercises. Far from being idle these split units in Bosnia and Germany are some of the most employed forces in the Army.⁶⁴

Conclusions

Based on the preceding discussion concerning recent operations the lessons or possibilities pertinent to the force structure decision and this study's criteria include:

- **Interoperability:** Both operations demonstrated that Army forces require structuring and equipping that facilitates operations with the other Services and other nation's forces. This includes providing the compatible C4I and provision of liaison capabilities, possibly down to lower tactical levels. Forces should maintain the capability to operate with potential coalition forces. This can include not being too dissimilar in organization, doctrine, or equipment.
- **Deployability:** Force structure must facilitate the rapid deployment of contingency and heavy forces. Current efforts in prepositioning equipment afloat and ashore greatly facilitate this capability, as do Navy and Air Force lift improvements. The reduction in size and weight of equipment and size of units is also a method to enhance deployability. It is also of note that currently

prepositioned equipment is invariably configured in brigade sets.⁶⁵ Thus, brigade equivalents remain easier to deploy and remain the structure of choice for force packaging.

- **Commandability:** There are important manifestations of this criteria in both operations studied here for several reasons, to include: First, to ensure that the Army's force structure stays in synch with leadership and C4I doctrine and capabilities. In other words, continues to allow face-to-face communications between commanders or modifies leadership techniques and doctrine accordingly. Second, to ensure that the commander and staff can physically and mentally handle the number of units they are provided to employ and not face span of control issues as in ODS. Third, to ensure that forces are configured appropriately for the missions they may perform, particularly becoming a JTF or ARFOR headquarters. And, fourth, to ensure that the minimal number of headquarters are survivable, redundant, or replaceable so that operations are not affected by their loss or damage.

- **Lethality:** Requires early entry force structuring to have the weapons systems and targeting capabilities necessary to fight and hold in a MIC or forced entry environment so that the unit can be deployed with a reasonable assurance of conducting successful operations. This requires an acknowledgment of the capability trade-offs with deployability requirements.

- **Agility:** Requires forces to have the physical means, structure, equipment, etc., and mental practices to react quicker than their opponent. This results in a

marked advantage over an opponent by setting the terms of battle and maintaining the initiative throughout operations. Agile forces proved their worth in both war in ODS and in OOTW in Haiti.

- Versatility: Requires force structures capable of responding to a variety of missions from the MIC environment of the Middle East to the OOTW environment of Haiti. Furthermore, structure should facilitate the optimal and flexible, or efficient, use of forces.

IV. Future Requirements

America's ground forces will have to be prepared to perform the tasks Caesar assigned to his Legions -- win wars, restore order, and preserve a stable and prosperous peace wherever direct American influence is required.⁶⁶

The design of U.S. forces, however, requires a clear assessment of the military challenges the nation will face.⁶⁷

As the first quote above suggests, in the future, the U.S. Army can anticipate performing almost any task involving operations on land. However, despite the validity of the second quote, it is not easy to make a clear assessment of challenges that will present themselves. With no crystal ball handy, force design is contingent upon experimentation, analysis, trends, and, in the end, a decision that, no matter how well informed, is only a best guess. This section again employs the study's criteria, to include efficiency, and attempts to make a best guess on how they must apply to and manifest themselves in tomorrow's force. This section also helps to provide a basis for analysis and comparison in Section V. It answers the final subordinate research question:

What are the future warfighting requirements to which force design decisions must respond? The section does this by examining the strategic environment, national and joint requirements, Army requirements and Army insights into the future. This section is an attempt, to paraphrase Sir Michael Howard, not to get things too badly wrong in an age of peace.⁶⁸

Strategic Context

The military's current and future strategic outlook is promulgated in a number of sources, foremost of which, for the mid-term, is the *National Military Strategy (NMS)*. The *NMS* is derived from the President's *National Security Strategy*, the *Joint Strategy Review*, and ex-Secretary of Defense Aspin's *Bottom-Up Review*.⁶⁹ Together these documents and studies, and their supporting papers, provide the overarching strategic context for the development and employment of U.S. military forces. The national fiscal environment in which the military operates is also a factor due to its marked impact on the shape of the military in the form of spending and manpower constraints.

The latest *NMS* requires the military to "Shape the international environment and respond to the full spectrum of crises, while we also prepare now for an uncertain future." This strategy involves two objectives: "Promote peace and stability and, when necessary, to defeat adversaries." Peacetime efforts to "demonstrate our commitment; improve interoperability; reassure allies, friends and coalition partners; promote transparency; convey democratic ideals; deter aggression; and help relieve sources of instability,"⁷⁰ chart a path of OOTW

requirements for today's and tomorrow's military. Fighting and winning wars is still the stated principal focus of the military, "with an ability to deter or defeat nearly simultaneous large-scale, cross-border aggression in two distant theaters", but is not the major thrust of the *NMS*.⁷¹ In fact, the absence of any significant military threat gives the U.S. "an unprecedented opportunity to shape the future security environment."⁷² Thus, the future will likely consist of missions similar to those of the past few years, missions, largely OOTW, covering the spectrum of conflict and requiring forces versatile enough to respond to a myriad of challenges. Furthermore, this lack of immediate threat appears to provide time to make changes and experiment with varying ideas. However, in a period of constrained federal budgets, it is doubtful if significant resources will be available for any large scale effort.

Concurrent with this lack of a major threat, the military, and especially the Army, is undergoing drastic change. The Army is getting smaller while the number of its requirements is growing. The Army's operational or contingency deployments are up 300% since the fall of the Berlin Wall, while the Army itself has lost over 35% of its people during the same time frame. The Army's budget has decreased even more, down 44% since 1989, and down from 26.2% to 23.2% of the Defense Department's budget.⁷³ In short, the Army has had to "do more with less" and it appears that it will continue to have to do more of the same. Personnel and budget cuts will probably not be as drastic, but will continue due to a persistent emphasis on savings as evidenced by the

Quadrennial Defense Review (QDR) and Congressional budget debates. In fact, the QDR resulted in a recommendation for further Army strength reductions of 15,000 active duty soldiers and 45,000 reserve component soldiers.⁷⁴

There is no discussion reflecting a reversal of this trend. The Army is going to have to continue executing contingency and OOTW operations with limited funding and a manpower base now reducing to 480,000 on the active side. All with the future still in doubt as evidenced by the National Defense Panel proceedings which continued to advocate change and force reductions.⁷⁵

All this leads to conclusions concerning the emphasis on the force characteristics of versatility, efficiency, deployability, and joint force compatibility or interoperability. According to retired-CSA Carl Vuono:

Conventional forces must be able to meet a wide array of challenges while drawing from a smaller reservoir of forces. Fewer forces and a broad range of challenges mean that each individual unit must be prepared to face a wider spectrum of missions.⁷⁶

Due to the number, complexity, and variety of tasks assigned, versatility and efficiency both remain essential qualities for U.S. conventional forces, possibly even more so than in the recent past. All forces must be both efficient and effective; able to do many things. The Army cannot afford to field, equip, and train forces that are not useful "across the full spectrum of requirements, as a member of the joint team effort."⁷⁷

What about deployability? Due to strategic choice and necessity, the U.S. has adopted a power projection strategy that requires "the ability to rapidly and effectively deploy and sustain U.S. forces in and from multiple, dispersed

locations.”⁷⁸ Because the high cost of improving and increasing the nation’s strategic lift mandates that the Army do its share to improve its deployability posture, the focus on strategic mobility of the future must include readjusting various aspects of force structure. The Army must develop smaller force structures, with lighter, more agile, more supportable, and more lethal units and equipment.⁷⁹ This force structure should be easier to lift, easier to sustain (requiring less logistical materiel and units to be lifted), and provide an effective fighting force (requiring less initial forces and follow-on forces to be lifted).

Last, in order to capitalize on and extract the synergistic effects of the several Services, any force structure in the future should and must be inherently capable of operating in a joint operational environment.⁸⁰ Systems, doctrine, and organizations must all be designed with the capabilities necessary to act effectively as part of a joint force or in command of joint forces.

Thus, the strategic environment, as defined by national defense policy documents and fiscal realities, places great importance and an increased requirement for force structure development incorporating traits of versatility, efficiency, deployability, and jointness. What about Army requirements?

Army Requirements

The conceptual basis of *Force XXI*, emerging Army doctrine and requirements, and Army Warfighting Experiment (AWE) insights, provide the relevant information necessary to derive and analyze future Army force structure and its desired traits and how they relate to this study’s criteria.

The Army's primary conceptual efforts concerning force design are embodied in the *Force XXI* process. The basis of *Force XXI* is derived from TRADOC PAM 525-5, *Force XXI Operations*, which provides "focus and direction" for *Force XXI*.⁸¹ A key thrust of this thought process is the assumption that future battle will occur over an extended battlespace. Due to increased lethality, and enhanced communications capabilities, forces will disperse even more than in the past. U.S. Army forces will need to control the tempo of future operations to keep the enemy off balance and retain the initiative. "Versatility will be a key characteristic of future doctrine."⁸² Together, these and the other concepts in *Force XXI Operations* point to a force more versatile, agile, and lethal than that we have today.

This information-based force is envisioned as inherently more flexible, strategically mobile, tailorable, capable of smoothly conducting joint operations, and versatile.⁸³ It is intended to be able to respond across the spectrum of conflict to a variety of threats, exhibiting the above five strategic characteristics and remaining operationally effective. Two of the key operational "battle dynamics" are battle command and battlespace.⁸⁴ These modify and expand existing concepts to meet posited Information Age conditions and changes.

Since the 1994 publication of TRADOC PAM 525-5, the Army has adapted its future operational concepts to requirements of the joint community. It has incorporated some concepts into current doctrine and sought to clarify others in emerging doctrine. Emerging doctrine is found principally in *Army Vision 2010*

and the production and revision of various new field manuals (FMs), especially the latest version of FM 100-5, *Operations*.

Army Vision 2010 is “the blueprint for the [Army] contributions to the operational concepts identified in *Joint Vision 2010*.”⁸⁵ Its focus is on the Army achieving full spectrum dominance as a member of the joint community. It is based on: 1) The versatility of land forces possessing full spectrum capabilities. 2) The importance of lighter, more mobile, more lethal, and more durable forces for power projection to achieve dominant maneuver and greater sustainability. 3) Concepts of command and operations relying on Information Age technologies that enable agility and enhanced tempo and shape the battlespace leading to decisive operations.⁸⁶ Forces required by *Army Vision 2010* are strategically mobile, versatile, lethal, agile, and operate effectively in a joint environment. Digitization, precision targeting and intelligence capabilities, lighter weight, and improved mobility all must be embedded in the force, its structure, and its doctrine.

The latest draft of the next FM 100-5, *Operations*, offers a look at the way ahead for the Army in a more evolutionary and iterative manner than that implied by *Army Vision 2010*. The Army’s role remains, “to fight and win the nation’s wars.”⁸⁷ The Army described must also be versatile and strategically mobile. The overall operational warfighting concept laid down in FM 100-5 *Operations (Draft)* aims at battlespace dominance and encompasses seizing the initiative, maintaining momentum, and exploiting success.⁸⁸ Controlling the tempo of an

operation by operating quicker than an opponent is deemed essential. Key enablers are the ability to conduct unified action (joint, multinational, and interagency), suitability for force projection, and capacity to conduct information operations. The manual posits five essential characteristics of successful operations: initiative, agility, depth, versatility, and orchestration.⁸⁹

While some thought has been given to flattening organizations to capitalize on improved C4I capabilities, little has been done.⁹⁰ The Army's emerging doctrine has not significantly considered eliminating echelons or flattening organizations. Some recognition of the possibilities that "small, advanced units may be more effective than the large ones of the past" is evidenced.⁹¹ But, the Army continues to rely on the existing divisional-based and echeloned structure to provide modularity and flexibility.

Experimentation is based largely on *Force XXI* concepts and emerging doctrine.⁹² The primary lessons concerning future force design, through the application of these concepts and doctrine through experimentation, arise out of AWE insights. Major organizational redesign has been deferred and the focus is on incorporating new Information Age technology and concepts, and precision lethality, into the existing force. The physical components of agility, mobility and communications, are enhanced, and the mental components of agility are becoming doctrinally ingrained. Strategic mobility, joint interoperability, and versatility are all embedded concepts sought by the *Force XXI* process.

Insights arising out of the AWEs concerning the Army's Experimental Force (EXFOR) have focused on conventional war scenarios rather than OOTW. This reflects the primary warfighting mission and thrust of the Army. Thus, while versatility to accomplish OOTW is not necessarily examined, the AWEs do provide a window on other emerging issues and directions related to this study's criteria and the future force.

Furthermore, although the experiments do not deal with a Macgregor-style group, AWEs, especially at the National Training Center (NTC), have focused on similar brigade combat teams or task forces, so they do provide a window to look at both sides of this issue. However, the question of changing span of control and its related issues remains virtually unchanged, untested, and unanswered.

Some of the key findings of recent EXFOR AWEs include the following:⁹³

- Battle command is enhanced by improved situational awareness gained through digitization and other technologies. This improves the agility of the units involved.
- The new methods of operation encompass vastly expanded battlespaces, on the order of a threefold increase. On the one hand, the EXFOR division dominates more battlespace, on the other this may seriously limit the ability of commander's to have face-to-face meetings with their subordinates if not provided a new means of movement.

- Changes in logistics and other structures, and the elimination of a company from each maneuver battalion, provides manpower savings of over 2,800 spaces over today's heavy divisions without sacrificing effectiveness.

- Force lethality is improved through digitization and situational awareness.

In addition, the JAVELIN medium anti-armor weapons system (and DRAGON replacement) vastly increases the lethality of the light force with respect to a heavy opponent. However, no mobility improvements have been made in the light infantry that improve their overall agility or ability to use this new lethality.

The next step in the Army's experimentation efforts is the formation of a Strike Force of about 5,000 soldiers. This is a funding dependent proposal with a start-up time of roughly FY99 that may see the 2nd Armored Cavalry Regiment converted to a new configuration upon return from its current mission in Bosnia.⁹⁴ This appears to provide a unit which can experiment with Macgregor's concept, but experimentation results to date are limited to the Army's chosen direction consistent with *Force XXI* and the enhanced AOE division or EXFOR.

Overall Army requirements and insights, as determined by a brief survey of *Force XXI* concepts, emerging Army doctrine, and AWE insights point to a force that must demonstrate traits consistent with those required by the strategic context. The findings of the Army's efforts in preparing for the future places emphasis on force structure traits embodied in the criteria of interoperability, deployability, commandability, lethality, agility, and versatility.

Conclusions

Based on the strategic context and the Army's requirements, the future warfighting requirements to which force design decisions must respond are as follows.

- **Interoperability:** The ability for the Services to work together in the future, to produce synergistic effects in a smaller overall military is one of the key issues and directions of the U.S. military. Both joint and Army doctrine continue to stress this point as does the *NMS*. Experimentation at the joint-level has yet to begin, however.

- **Deployability:** Withdrawal from Europe and other forward presence locations, coupled with a security strategy emphasizing shaping the international environment and prompt responses to crises, mandates that the force be as strategically mobile as possible. Costs of improving and increasing lift assets are significant and growing. Thus, the Army must stress lighter forces easier to move and sustain; forces that are also modular and tailorable that provide an appropriate and rapid response to crises.

- **Efficiency:** Both force and budget reductions due to fiscal constraints require future force structure be as small and cheap as possible. It is doubtful, especially considering the strategic outlook, that this situation will change through the year 2010.

- **Commandability:** While digitization and computer technology enhance some aspects of battle command, they also challenge traditional methods of

leadership by expanding the battlespace a commander must be concerned with. The concept of battle command is a key aspect of the future force, but the impact of changes concerning battlespace size, span of control, and computer technology is unknown in light of current leadership doctrine and training, other than that there are many challenges for future leaders.

- **Lethality:** Precision strike and other related technology provides weapons systems that are more lethal. The requirements of a smaller force and nebulous threat also combine to mandate future force lethality or “more bang for the buck”. This is especially true for early entry or forward presence forces in the future.

- **Agility:** All aspects, both physical and mental, are important in the future. Agility is probably the ultimate manifestation of the possible benefits of the Information Age RMA. The ability to think and move, or react, faster than the enemy, to get inside of the enemy’s decision cycle, is the ultimate goal of both *Force XXI* and *Joint Vision 2010*. Thus, lighter and more mobile forces, that can receive and follow directions rapidly or exercise initiative intuitively are required.

- **Versatility:** All futuristic thought concerning the Army by the Army and others stresses the imperative that the force must be versatile. In large part this is due both to the uncertain nature of the threat over the next decades and to the reductions in force size over the past decade. In addition, efficiency requirements mitigate against forces designed for specific purposes. Force structures, then, must provide capabilities adaptable to many situations.

V. Comparison and Analysis

Based on the discussion in the previous sections, the paper here analyzes and compares the relative merits of the modernized AOE Heavy Division and Colonel Macgregor's group-based structure and ultimately provides the answer to the paper's primary research question. The criteria first presented in Section I and further developed and examined in Sections III and IV provide the tools for this analysis. The discussion of the two directions in Section II provides the starting point for comparison. Both structures have advantages and disadvantages concerning their adoption by the U.S. Army. However, Colonel Macgregor's structure, while better in many aspects, is impossible to adopt at this time due to critical shortcomings concerning two of the criteria, commandability and efficiency (see Appendix 2 for a synopsis).

Interoperability

Historical cases, supported strongly by anticipated future requirements, necessitate an Army force structure that facilitates operations in both joint and combined environments. Overall the Macgregor structure provides the greatest advantage in the area of interoperability. Macgregor's proposal possesses a major advantage in the capabilities and structure of its proposed C4I battalion or group. He essentially provides a structure with comparable and even improved capabilities of a division-sized command and control structure for each of his brigade-sized maneuver groups. The proposal also possesses an additional minor advantage in the ability, provided by anticipated manpower savings, to

man numerous robust liaison sections for assignment to adjacent and higher headquarters. The Macgregor solution does have one minor disadvantage for interoperability in comparison to the advanced AOE structure. That involves the consequences of the magnitude of the differences that will result when Macgregor groups are employed alongside less capable and more traditionally structured allied formations in combined operations.

The overriding advantage for interoperability is the joint-oriented and robustly designed C4I battalion or group that is part of every Macgregor structure.⁹⁵ The C4I battalion structure corresponds to the current and modernized AOE divisional base C4I assets, but it is placed at the group-level and designed with joint interoperability in mind. Every C4I battalion is more robustly manned (as compared to the AOE brigade design) and designed to operate as a JTF headquarters or as a component or functional command. Other service augmentation remains a requirement for joint employment, but within a structure formed and equipped to accommodate such augmentation.

This concept of structuring for joint and information operations is central to maximize and capitalize on the benefits and flexibility provided by the ongoing RMA. It is a flattened and inherently joint design that Macgregor proposes. On the other hand, the current designs at division and below are not specifically designed for joint or component command operations and, while they do function as such, they generally do so with difficulty. Current efforts in experimentation

are aiming in this direction, but the primary focus is on information management tasks and equipment compatibility.

Another minor advantage for interoperability offered by Macgregor's proposal has its source in anticipated manpower savings. These savings provide the resource base for the assignment and manning of more liaison teams during operations, a factor proven to be an important enabler especially in joint and combined operations, to include both Operations DESERT SHIELD/DESERT STORM and UPHOLD DEMOCRACY. These teams provide joint and combined C4I links, coordination conduits, tactical advice, and force capabilities information. It is unknown how the numbers of teams compare from Macgregor's proposal to the Army's current and future direction since no definitive plan is provided by Macgregor and since liaison efforts are usually ad hoc and based on the demands of the situation. In the aggregate, however, Macgregor's proposal provides manpower for more and larger liaison sections.

Finally, in regard to interoperability, the group structure does have a minor disadvantage for combined operations due to its radical change, rapidly adopted, in structure and operating doctrine. The resulting differences could make cooperation with a force of this design harder for more conventional armed forces of such traditional allies as the NATO nations and the Republic of Korea. It may be more difficult to place U.S. groups into another nation's corps structure or, vice versa, other nation's divisions into a U.S. corps/JTF, due to their fundamentally different doctrine and capabilities. A solution, currently adopted

in many combined operations, involves assigning a greater separation between allied forces in operations envisioned for theaters where allied units differ greatly in structure and capability. This solution, however, may impact negatively on the ability to task organize in the most effective manner and would require adjustments to current command plans and warfighting organizations. These disparities are not foreseen as proving as difficult with the enhanced AOE division, since, while it will have different doctrine and capabilities, there will be fewer of them any time in the near future, and none envisioned now as being incorporated into standing combined warfighting organizations. In addition, the enhanced AOE division retains a more common structure to those of our allies with major change occurring in equipment and doctrine. The Macgregor proposal changes the whole force in all three areas of structure, equipment, and doctrine. However, with a low threat international environment and national separation and differences already a recognized factor in combined operations, this is a minor disadvantage which can be managed through adaptation. Overall the Macgregor structure promises to be a better option in the area of interoperability, especially in the joint arena.

Deployability

Historical cases presented in Section III amplify the importance of a power projection force, one structured to facilitate the rapid deployment of contingency and heavy forces. This requirement continues into the foreseeable future due to both the continuing global situation as well as emerging U.S. strategies and

doctrine. The comparative advantages in the area of deployability are largely split, with a slight advantage to the Macgregor group structure. There are three aspects to this problem, the first of which, the number and type of strategic mobility assets, has the greatest impact on the ability of Army forces to deploy, but is beyond the scope of this paper being primarily applicable to the Navy and Air Force. The second is the relative capabilities of like-sized forces for deployment and this provides the slight advantage to the Macgregor proposal since his structure provides a more robust, capable, organic, and consistent force for deployment at the group-level than does the current force or enhanced AOE design through ad hoc brigade combat teams. The third aspect is whether or not either concept lightens the load for deployment while maintaining capabilities. This space or weight issue appears split since both approaches seek to lighten equipment for both deployment and sustainment reasons.

The Macgregor groups provide a warfighting unit in a single coherent package that is structured similarly to both the current in-place prepositioned sets and the prepositioned afloat set. These sets would require some changes to match the Macgregor structure, but they will require some updating to match changes in modernized Army AOE divisional brigade structures (that is only part of a normal force package) as well. In comparison to such a force, however, the Macgregor group provides a structure with its internal reconnaissance, strike, and robust C4I battalion in a single, organic package. Then, by converting the entire force rapidly to these group structures, with similar equipment throughout,

the Macgregor proposal avoids having only a relatively few units that match the level of training and expertise required by the set of equipment that is prepositioned. The current direction and the *Force XXI* modernization plan seems destined to create a force of varying capabilities and equipment modernization levels due to its slow and methodical nature. This results in a varying number of units at any given time which will possess equipment matching that of the prepositioned sets, thus limiting deployment options.

Another aspect of Macgregor's proposal is the emphasis on lightening equipment in future modernization. He recognizes that the Army is heading in this direction, but his emphasis is on equipment and programs that are even lighter, easier to deploy, and easier to sustain. For instance, one aspect of the Army's current direction is using Total Asset Visibility and related programs to reduce logistical footprints and sustainment stockpiles. However, while some work is being done, new equipment often remains heavy and difficult to deploy. Macgregor emphasizes doing even more and relooking modernization initiatives to ensure that in addition to being capable and lethal, that they are also of lighter weight, since deployability is such a crucial issue in a power projection force. For instance, he recommends cutting a developing heavy system, the Crusader Artillery System, to help pay for other required and recommended changes and improve, not worsen, the Army's strategic mobility posture.⁹⁶

However, not all aspects of his proposal are improvements in this area. His group types eliminate light infantry units and heavies up airborne, air assault,

and light cavalry formations. These unit's rapid deployment capability (the principal reason for their initial entry into the force) will be reduced, thus making it more difficult to deploy forces to areas not covered by forward deployed groups or prepositioned equipment, especially in situations requiring maximum speed rather than the capabilities of a heavier, more lethal force.⁹⁷ Despite this disadvantage, the Macgregor structure does provide a force more in line with the strategic requirement of power projection.

Efficiency

Fiscal constraints imposed on the Army, which show no signs of lessening, require future force structure be as small in numbers and cheap in costs as possible. The current Army direction is the most efficient of the two options due to both dollar and manpower costs largely unconsidered by Colonel Macgregor. While the Macgregor structure is presented as more efficient in both dollar and manpower savings, there are some considerations that he does not discuss in his book that could totally negate the efficiency aspects of his proposal.⁹⁸ Furthermore, these potential disadvantages are so severe that they may make it impossible to adopt a structure such as his that is so different from the current one. In fact, this factor probably provides a major reason behind the evolutionary approach usually taken in such large scale force reorganization.

The first consideration is based on the statement he makes that transition costs are not included, but "in terms of recent experience, division deactivation costs generally do not exceed the annual operating cost for an existing

division.”⁹⁹ Macgregor assumes that this restructuring would be phased with only a few divisions deactivating and transitioning each year, thus keeping the costs down. However, deactivation costs are not the only costs associated with the division. The units constituting the division are, in fact, not disestablishing or deactivating as did many of the divisions in the recent drawdown. At the most they are conducting a reorganization. Much, if not most, of their operations and maintenance costs will continue during any reorganization. Also, with such sweeping change, impacting all divisions, the costs of unit and personnel moves to realign and restructure the force in accordance with his strategic vision would probably be substantial. In short, it is doubtful whether any cost savings would be achieved at all until the transition is complete.

Even then there are hidden costs that Macgregor does not take into account. First, his group structure is an interim force design, thus change and costs will continue (granted this parallels the current AOE redesign ongoing today which is a continuous and lengthy process) even beyond Macgregor’s steady state. Second, his structures are dependent on increased or renewed fieldings of equipment such as the Multiple Launch Rocket Systems (MLRS), the High Mobility Rocket System (HIMARS), and the Armored Gun System (AGS). These added costs in procurement, especially those required to restart the AGS program, would be significant. His proposals to defer or cancel other Service programs may provide the funds needed for Army modernization, but it is doubtful that his arguments will find many adherents outside of the Army.¹⁰⁰ The

Army's current modernization direction also entails significant costs, but these are largely subsumed by Macgregor's proposal. He advocates essentially all programs currently under development except for the Crusader, but increases the procurement of the above-mentioned items. Furthermore, the current direction reduces the numbers of tanks and fighting vehicles requiring upgrading in the future force since as each battalion modernizes to match the EXFOR it will also reduce the number of combat vehicles from 58 to 45.¹⁰¹ Last, Macgregor discounts the costs required to establish and maintain his 180-day cycle system that is claimed to eliminate have and have not units, and thus tiered readiness.

Macgregor's proposal is also problematic in the area of personnel. Overall Macgregor predicts upwards of a 10,000 man savings through adoption of his structure in total. This compares to a current savings of about 2,800 soldiers per modernized AOE division, or a potential savings of about 17,000 soldiers at the end of the process.¹⁰² However, it is doubtful that this number will ever be realized across the entire six division heavy force, especially between now and the year 2010 when the Army plans on moving forward with additional organizational redesign with no endstate in time or numbers predicted. Thus, in gross terms it is likely that the group structure will result in greater immediate manpower savings and subsequent redistribution.

However, the personnel savings identified are not located where the Army currently has its greatest problem. These savings will not be reflected at the field grade officer level where the Army currently faces its greatest challenge

and largest shortages. While the new Officer Personnel Management System (OPMS) XXI seeks to address this and other issues, the Macgregor plan will exacerbate this problem.¹⁰³ Increasing general officer staffs from ten to twenty-six, with lieutenant colonels as the primary staff officers, will result in larger requirements for both lieutenant colonels and majors to fill positions currently held by majors and captains. This issue is made worse by the robustness envisioned for the group and corps/JTF staffs. While Macgregor does not provide enough specific details to arrive at specific figures, his proposal has a clear impact on field grade officer distribution, which could negate the efforts currently underway through OPMS XXI and the Army's current direction.¹⁰⁴ Changes in rank structure authorizations can be legislated and do occur. However, it takes time to develop majors and lieutenant colonels and a solution is unlikely in the short term, especially with the existing shortfall unsolved.

The current Army direction then must be assumed to be the most efficient of the two options due to both dollar and manpower costs largely unconsidered by Colonel Macgregor. With the exception to immediate personnel savings, most transition costs of the current Army modernization effort will be duplicated in the Macgregor scheme, along with some substantial costs he does not address or anticipate. In fact, the change envisioned for the entire army by Colonel Macgregor provides little in the area of efficiency and may in fact be incapable of introduction due to the large costs not considered.

Commandability

In the area of commandability the historical cases presented earlier highlighted the importance of current leadership doctrine and practices and their relation to force structure, the necessity to manage span of control issues, and the need to properly resource and structure C4I units. Both the technology and emerging doctrine of the future challenges these requirements while providing promise for the improvement of battle command. Both the group and enhanced AOE division concepts embrace and maximize the use of Information Age technologies as aids to strengthen and improve C4I capabilities. Colonel Macgregor's concept assumes that a change in organization will naturally have great additional benefits. This is another area where the current Army direction has the advantage because of potential problems concerning the Macgregor concept, especially those due to the issue of span of control, particularly as exacerbated by expanded battlespace. The changes Macgregor proposes appear to conflict with the requirements of traditional Army leadership doctrine. In addition, his elimination of an intermediate command echelon, the division, limits flexibility in responding and providing C4I for mid-size OOTW missions. On the other hand, Macgregor does make provision for the command of joint forces, which is not addressed in the current Army proposals. The question that must be asked is whether the benefits he predicts will counterbalance the costs of their implementation.

The key issue revolves around on span of control. There are both personality factors; including the span of attention, knowledge, competency, and personality of the commander (and his staff); and organizational factors, including similarity of function of subordinates, number of subordinates, geographic contiguity of subordinates, complexity of function, technological capabilities, and others; that impact on the commander's ability to control his subordinates.¹⁰⁵ In short, it is impossible to determine the optimal span of control of any given unit and its commander since no two situations are identical. However, this issue cannot be cavalierly ignored or the assumption made that technological advances will provide the capabilities necessary to alleviate span of control considerations. Currently there is no hard data available on what effect Information Age technologies will have on this issue, especially concerning numbers of subordinates requiring control and the geographic dispersion of these subordinates.

Thus, it would be dangerous to adopt Colonel Macgregor's group structure without further experimentation concerning this issue. A Major Theater War (MTW) in the future on the scale of ODS, that remains a major planning requirement for the military, could place large numbers of subordinate groups, beyond the scale of any span of control in the past, under the control of a corps headquarters. While perceived as unlikely, it is not impossible and is the most dangerous possibility that the U.S. Army faces. The Army is already finding it difficult to adapt to an expanded battlespace, or geographic dispersion of

subordinates, which, in current AWE experimentation, is already threefold that of existing units. This is providing span of control and other problems already.¹⁰⁶

The requirement, created by Macgregor's proposal, includes this expanded battlespace and a possible additional threefold increase in the number of subordinates to control in a MIC environment. This results in a possible nine-fold increase in the span of control when the Army still has not solved the first problem of geographic dispersion. This adds to the problem an additional level of complexity requiring adaptation which may or may not be successful across doctrinal, training, modernization, and other arenas.

Furthermore, the already expanded battlespace, with a possible further increase in numbers of subordinates, brings into question the Army's leadership doctrine. Current doctrine and practice focuses on face-to-face leadership. This value can be captured in the following statement by General Patton:

Commanders must remember that the issuance of an order, or the devising of a plan, is only about five per cent of the responsibility of command. The other ninety-five per cent is to insure, by personal observation, or through the interposing of staff officers, that the order is carried out.¹⁰⁷

To change conditions so much, possibly a nine-fold increase in area to cover and number of subordinates to control, requires a relook at how Army leaders are trained and developed and is already, as stated above, problematic for a threefold expansion of battlespace. The implications include consideration of the adaptability of the Army's current leaders, especially those at the field grade and higher level; those trained in a face-to-face leadership style who

could be found commanding units and subordinates they may rarely see.

However, while a problem for the Army's current direction, it is much less so than for Macgregor's proposal. The *Force XXI* process of change is a slower, more deliberate one than that proposed by Colonel Macgregor and provides more time for the analysis of change to occur as well as for the actual adaptation of doctrine and training to how the Army is changing. *Force XXI* is more comprehensive in this manner and less likely to adopt an unworkable solution.

There is a plus side to the group and corps/JTF concept, however. The capability to function as and operate within a JTF are part of structures down to the group and provide more options for the command of joint and component commands. The current Army direction proposes to head in this direction, but Macgregor's proposal is specific and accomplished in the near term. However, while more robust and designed to operate in today's and tomorrow's joint environment, the elimination of a command echelon limits flexibility. The only C2 elements available will be small, group structures (many) or large corps/JTF (few). Divisional structures will be cut, limiting the ability to respond appropriately to what could be termed a mid-size OOTW contingency.

The current operation in Bosnia is an example. Initiated by 1st Armored Division the mission was obviously too large for a group to undertake. In fact, the division commanded fourteen brigades, consisting of 42 battalions!¹⁰⁸ Without a divisional echelon the mission would have required a corps/JTF. This would have tied down one of only four operational-level warfighting

headquarters, an unacceptable use of scarce resources. This issue, combined with that of span of control and leadership doctrine and training, outweighs any advantage Macgregor's structure provides in the command of joint forces and provides an overall comparative advantage to the Army's current direction in the area of commandability.

Lethality

This paper's historical examples call into question the capability of the Army's rapid deployment forces in the area of lethality, while acknowledging the utility of highly lethal forces in a MIC environment. Future requirements continue to emphasize a focus on lethality as well as its enhancement in a smaller, more resource constrained force. Macgregor's proposal has the advantage in the area of lethality since it increases the overall number of combat systems capable of delivering lethal fires against the enemy. It also has the potential to increase the chance of more effective employment of these systems in the close fight.

From a straight-forward numbers perspective the Macgregor group structure is more lethal, at least in the close fight. His structure adds additional tanks and fighting vehicles (approximately 200 more of each in the total force). Macgregor also posited an increase of approximately 100 MLRS in the force, but the Army is currently fielding additional MLRS batteries to each of the heavy divisions, creating a deep attack battalion with the existing MLRS battery and Target Acquisition Battery. This increases MLRS systems by nine per division, effectively halving Macgregor's projected numbers, but still providing an increase

to the base. His proposal also procures both the AGS (252) and U.S. Marine Corps' Light Armored Vehicle (LAV) (252 of each) for the light force. This alleviates some of the major concerns about the early entry of light forces and their suitability for use in a MIC. Furthermore, with the recent announcement that the Army's Experimental Force will reduce each heavy maneuver battalion by a company, this lethality gap widens by an additional 100 heavy vehicles, tanks and fighting vehicles combined, per modernized heavy division.¹⁰⁹

The group structure may also add lethality through the permanent organization of what is already approximated with brigade combat teams. Macgregor's structure goes one step further than the current Army direction. It incorporates cavalry, fires, target acquisition, and information warfare capabilities, with permanent combined arms battalions into an effective and efficient force, "a warfighting organization with a form that parallels the shift of warfighting functions and activities to progressively lower levels."¹¹⁰ This provides a structure with increased stability for training and operations, one which should be able to synchronize its assets more effectively at the decisive point due to a continuing and habitual relationship between all combat systems and multipliers. The current brigade combat team, while largely composed of units tied together through a habitual attachment of some sort, is less cohesive and more ad hoc. Plus, assets assigned to the group are oftentimes withheld by divisions from the brigades, especially cavalry and strike assets.

The only question in the area of lethality is if the corps/JTF has the ability to adequately orchestrate the fight of a number of group structures (as discussed under commandability) and whether the group and corps/JTF can adequately pick up the deep, close, and rear battle responsibilities of the division. These questions also apply to the EXFOR division due to its expanded battlespace, but not as much since this force maintains the intermediate division-level to synchronize the fight. But, on the whole the group concept is more lethal.

Agility

Analysis of historical cases studied here demonstrate the advantages a force has when structured and provided with greater physical and mental means which enable it to react quicker than an opponent. The characteristics of agility is also posited as central to the force of the future. Macgregor claims an advantage in agility over the current Army projected force. The basis of his claim rests on the notion that flatter organizations are more agile than comparable hierarchical formations, and from the fact that Macgregor's force design provides additional vehicles for light force combat groups. The question of agility as a by-product of flattening must be qualified by examination of the limits of span of control, for the question is not whether a Macgregor group is more agile than a Force XXI division, comparatively equipped with information management technologies, but whether a Macgregor corps/JTF is more agile than a corps composed of divisions.

Information Age technologies and enhanced situational awareness are envisioned to improve agility regardless of the structure. However, Macgregor's structure has a potential for greater agility by eliminating a command echelon. It is posited to act faster since it is more horizontally organized.¹¹¹ Commands and instructions will reach executing units faster, improving reaction time. This is a key improvement Macgregor claims for his proposal and corresponds to changes and adaptations in the business world.¹¹²

However, span of control considerations are of concern here. While it appears reasonable to assume that a flatter structure may react quicker solely due to an increase in the speed of information flow, this may not be the case. If the controlling headquarters has too many and too many different types of organizations to provide instructions, then information flow, decisionmaking speed, and thus, agility may all decrease. The Army's direction is not attempting to move in this way, but is maintaining more traditional hierarchies based predominantly on command echelons providing C2 for three to four principal combat units. In the Army's direction, orders from corps to brigades go through the intermediate divisional echelon. The corresponding Macgregor corps/JTF would transmit orders directly to the brigade equivalent group. If there are few of these assigned to the corps/JTF, or if the order only impacts a few of those groups assigned, or is the same for all, then there is a potential to speed information flow and reaction time. However, if detailed orders requiring different actions by each of many groups are required, this may not be the case.

The corps may take longer both preparing and transmitting orders for more subordinate groups, whereas today's force uses the divisional echelon to assist and speed this process. The number of subordinate units, the type of order or instruction, as well as the specific situation are all variables which impact on whether or not the speed of information flow and reaction time, both related to the physical aspect of agility, is improved or not. Enhanced situational awareness of all echelons is posited to provide a significant increase in agility without any other structural change. Thus, while there is potential in this area, it is by no means certain which direction has the advantage on this specific point.

One of the proposed group structures also improves agility in the Army's light force. The airborne-air assault group structure improves the mobility of the light force by eliminating the foot mobile light infantry and replacing it with groups that incorporate enhanced mobility through airborne and helicopter capabilities redistributed from existing assets as the force is reorganized into groups.¹¹³ Furthermore, airborne and air assault units possess over double the number of vehicles of light infantry units. While Macgregor does not propose to give these units any more vehicles, he provides each group with a helicopter assault battalion(s) that would go a long way to improving light force mobility and the physical component of tactical and operational agility. Current modernization efforts concerning the Army's light forces focuses on lethality, the soldier system, and night vision technologies. Ground or air mobility

improvements are not forecast. Macgregor's proposal essentially provides the entire light force with the approximate mobility of the existing air assault division.

Thus, while this may not make as large an impact on the agility of the force as Macgregor posits, since it only deals with seven out of 26 proposed groups, the group structure does provide some improvement in the area of physical agility. In addition, these mobility-related aspects of agility are also aided by a posited, although uncertain, speeding of the flow of information, at least in certain circumstances. The question mark remains in the mental aspect of agility reflected in the commander's ability to lead and control his units.

Versatility

Analysis of the historical examples examined in this paper leads to a requirement for a force structure capable of responding to a variety of missions, from OOTW to MIC in all areas of the world. The requirements of the future, especially combined with the necessity for efficiency and the uncertain nature of the threat, reinforce this requirement. The answer to the question posed by this criteria is mixed, but with an edge toward the Army's current force. Neither direction seems to improve greatly upon the current versatility of an already modular force. The Army's direction retains an echelon able to respond to more requirements, while Macgregor's proposal may make slightly more efficient use of assets in the aggregate.

In some ways the group structure is more versatile, although its modular design and capabilities already exist in the current force. What the group

structure does do is provide a smaller building block from which to construct courses of action. For instance, with its embedded support structure it can be employed short of a division without possibly breaking up the division or employing the bulk of a division. This is a major advantage claimed for this proposal by Macgregor, since:

Instead of stripping out the command, control, and support elements of a division in order to reinforce brigade task forces for deployment to contingencies, the Army can deploy a Group structure with robust C4I and support elements under the command of a General Officer with a complete staff.¹¹⁴

This, he claims, avoids rendering "the division virtually unusable for any other operation." However, this "rendering" has yet to occur to any significant degree in any recent operation. In fact, recent operations, especially in Haiti and Bosnia, as well as ODS, have shown that the force is modular and capable of creating ad hoc formations with existing assets. What Macgregor's proposal avoids are stay-behind units, and headquarters, stripped of their assets and difficult to deploy into other contingency operations. A potential problem, but one not yet experienced by the force and one which may be alleviated due to the essentially modular nature of today's Army units which could be used to replace stripped out assets, if required. Thus, while there is a slight potential for increased versatility, it is not significant.

On the other hand, as mentioned previously, the lack of a divisional structure limits flexibility in responses. With no "medium" sized headquarters, such as the division, as a building block, the potential exists for misusing a

corps/JTF headquarters in an operation it is too large or robust for or overtasking a group to control too much. A multi-echeloned structure enhances versatility by providing more options for decision makers. A better solution to this criteria is probably the Brigade-Based Division, that creates permanent brigade teams, or groups, but retains a divisional echelon for C4I purposes.¹¹⁵

Summary

In the preceding examination of this paper's criteria, Macgregor's proposal is more advantageous on the surface, having an edge in interoperability, deployability, lethality, and agility. The advantages in the areas of deployability and agility are only marginal, however. On the other side, the current Army direction appears more advantageous in the areas of efficiency, commandability, and versatility, with only a slight edge in the latter and largely due to disadvantages of the Macgregor proposal in the first two areas. From a purely comparative standpoint then Macgregor's proposal should be adopted.

However, while this group and corps/JTF concept appears more advantageous from consideration of a numerical preponderance of the criteria, it's disadvantages are severe enough and advantages slight enough to effectively rule out its wholesale adoption in the near-term. The questions concerning cost, manning, span of control, and leadership doctrine are severe enough to require additional consideration and trade-offs, especially since the proposal's comparative advantage is not that great.

Research Question

Based on the preceding analysis this paper's primary research question (*Should the Army adopt a Macgregor-style group-based force structure during the next decade or maintain the current Army thrust line?*) is answered here. In short, the Army should not adopt a Macgregor-style group-based force structure at this time. There is insufficient evidence that supports making such a large change. The risks are too great of breaking a force that has already undergone massive change in close to a decade of downsizing, reduced budgets, and increased operations. A change this large and costly needs thorough experimentation, research, and salesmanship to convince the public, Congress, the Department of Defense, and the Army itself that this is the right way to go.¹¹⁶

While a change of structure or organization can be argued for as necessary to capitalize on an RMA, it remains questionable if the Macgregor proposal provides the right structure. Due to its advantages concerning several of the criteria, especially those directly related to the Army's emerging warfighting doctrine, this structure could be the answer of the future. However, this future remains uncertain and the disadvantages of this structure concerning efficiency and commandability determine this proposal's unsuitability, at least at this time.

VI. Conclusions

Colonel Macgregor's concepts and proposals provide ample fodder for debate both internally and externally to the Army. However, without convincing and provable evidence it is doubtful that any such change will ever occur. This

does not mean that the ideas do not have merit. On the contrary, such proposals and initiatives are necessary, even vital, for providing the intellectual stimulation and impetus necessary to accomplish change, especially in such a large, tradition-oriented organization. While these ideas may be resisted by many as change, and thus unwelcome, there remain practical and compelling reasons not to adopt them, especially in their entirety, as found in this study.

Key Findings

- The corps as JTF structure appears compelling and, possibly, inevitable.
- The group-based structure appears suited for many, but not all, OOTW and LIC missions. In addition, the evidence is insufficient to support it for a MTW or MIC, the Army's primary mission. The unknown ability of Information Age technologies to increase a commander's span of control to the required level is too problematic.
- Just as there is no major threat to prevent major reorganization at this time, there is no compelling reason requiring change at this time.
- The enhanced AOE division experiments, while maybe not optimizing improvements in all the areas of technology, doctrine, and organization, are modernizing and enhancing the capabilities of the force.
- More experimentation is required prior to making a change of this magnitude, especially in the areas of span of control and leadership.
- The Army's limited resources, both dollars and manpower, may prevent any such wholesale structural change as that proposed by Colonel Macgregor.

Recommendation

Do not change to a Macgregor-style group-based force at this time.

However, consider some change and experimentation as the Division XXI reorganization is complete (around FY00), as follows:

- Develop and experiment with Corps XXI as a standing JTF along the lines proposed by Colonel Macgregor.
- Develop and experiment with the 2nd ACR Strike Force proposal along the lines of a Macgregor light recon-strike group.
- Inactivate the 10th ID(L) (or 25th ID(L)). This provides the structure for two airborne-air assault groups or light recon-strike groups. Station one at Fort Drum and one at Fort Lewis (replaces the current 1st Bde, 25th ID(L)), one for each theater, east and west. Realign the brigade in Alaska with the 25th ID(L).
- Inactivate 1st Armored Division (or 1st Infantry Division). Realign 1st Infantry Division with three brigades in Germany with one mechanized, one armor, and one light brigade for enhanced versatility. Convert the last brigade in Germany to a heavy group or heavy reconnaissance group (becomes the 1st Heavy Group with 1st Armored Division lineage or could reactivate 11th ACR). Inactivate one brigade at Fort Riley and duplicate the heavy group there (becomes the 2nd Heavy Group with 2nd Armored Division lineage).

The result is one JTF/Corps, one light recon-strike group, two airborne-air assault groups, and two heavy groups that are available both for operations and experimentation from FY00 to at least FY05. This leads to a decision around

FY05 to realign the force as necessary with completion around FY10. This keeps on track with current decisions and promotes greater stability in the force than does the wholesale change espoused by Colonel Macgregor, and others.

Recommended Areas for Further Study

This monograph is focused on only one alternative to the Army's current force structure direction and is only the starting point for discussion and debate.

Areas for further study include:

- Examining the recommendation above for feasibility and implementation.
- Examining the other proposals mentioned in Section II.
- Examining a force structure mix of groups, divisions, and corps/JTFs.
- Comparison of the other proposals and the current Army direction to determine unequivocally which alternatives are most promising and actually deserve experimentation and, thus, resource expenditure.

The next decade or two are critical ones for the U.S. Army as it modernizes. In this era of low budgets, increased operations, and low threat of major war involving the U.S. military, it is important to do everything possible to prepare for the next war. This monograph is an attempt to help clarify the issues involved and provide an analysis relevant and useful to future decision makers.

Appendix 1: Definitions of Criteria and Other Key Terms¹¹⁷

Agility: The ability of friendly forces to act faster than the enemy and is a prerequisite to seizing and holding the initiative. Agility is a mental as well as a physical quality. (1-3)

Commandability: Defined by the author as the ability of an organization to be commanded by its leaders. Includes aspects of span of control, command responsibilities, C4I structure, and leadership doctrine.

Corps/JTF: The corps is the largest tactical unit in the U.S. Army and the instrument by which higher echelons of command conduct operations at the operational level.¹¹⁸ In the context of this monograph the term corps/JTF is an augmented corps command structure that has the capabilities to orchestrate the operational activities of a JTF, in short a standing JTF.¹¹⁹

Deployability: Deployment encompasses all activities from origin or home station through destination. Specifically including intracontinental U.S., intratheater, and intertheater movement legs, staging, and holding areas. (1-51) The ease with which a unit can be deployed determines its deployability.

Efficiency: Defined by the author as the ability of a unit or force to optimize the use of its resources, to include primarily funding and manpower for the purposes of this study. Manpower aspects include numbers, grades, and specialties or MOSs.

Group: A flexible administrative and tactical unit composed of either two or more battalions or two or more squadrons. The term also applies to combat support and combat service support units. (1-74) In the context of this monograph the term group will be used to designate a unit designed in accordance with the concepts espoused in *Breaking the Phalanx*.

Interoperability: The ability of systems, units, or forces to provide services to and accept services from other systems, units, or forces and to use the services so exchanged to enable them to operate effectively together. (1-85) For purposes of this study includes the ability to operate effectively together between other elements of the Army, services, nations, governmental agencies, non-governmental agencies, etc. Emphasis is on Army internal operations and external operations in joint and combined operations.

Jointness: In the context of this monograph, jointness is the ability of a unit to operate with, for, and in command of other Service forces. The better a unit can perform with other Service forces, the more joint it is considered.

Lethality: The ability of a force to employ firepower and maneuver to destroy, defeat, or neutralize opposing force's ability and will to fight.¹²⁰

Manning: In the context of this monograph manning is the ability of the U.S. Army to provide the required manpower, grade and MOS, to a unit.¹²¹

Revolution in Military Affairs: A noticeable and profound change in how military operations are conducted due to the combined effects of the application of new technology, the application of innovative operational concepts, and/or the development of new organizations or organizational adaptation. The nature of war does not change, but the conduct does.¹²²

Span of Control: The ability of a commander to lead, prioritize, and allocate assets required to employ and sustain combat power in an efficient and timely manner.¹²³ This ability is limited by the number and types of units that a commander can visualize, direct, and control.

Strategic Mobility: The capability to deploy and sustain military forces worldwide in support of national strategy. (1-145)

Versatility: The ability of units to meet diverse mission requirements and for commanders to shift focus, tailor forces, and move from one form or type of operation to another rapidly and efficiently. It is also the ability to be multifunctional and to operate across the full range of military operations. (1-160)

Appendix 2: Criteria Summary

| Criteria | Best Met or Improved By: | Comments/Concerns: |
|-------------------------|---|--|
| Interoperability | Macgregor's Group | Improves and embeds enhanced and robust C4I. |
| Deployability | Macgregor's Group -- slight edge | Group concept eliminates light forces. Groups fit prepositioning and FDO employment better. |
| Efficiency | Enhanced AOE Division | Group structure underestimates costs in dollars and manpower. May not be supportable. |
| Commandability | Enhanced AOE Division | Question over leadership doctrine and span of control. |
| Lethality | Macgregor's Group | Provides improved structure and increased number of systems, especially for the close fight and light force. |
| Agility | Macgregor's Group -- slight edge | Echelon elimination may speed information flow and improves light force mobility. |
| Versatility | Enhanced AOE Division - - slight edge | Makes better use of forces, but does not provide flexibility in headquarters. |
| Conclusion | Enhanced AOE Division better choice, but Macgregor's Group structure worthy of experimentation. | Efficiency and Commandability concerns are almost screening criteria due to the costs and consequences of error. |

Endnotes

¹ Douglas A Macgregor, *Breaking the Phalanx: A New Design for Landpower in the 21st Century* (Westport, CT: Praeger Publishers, 1997).

² Ibid., xii.

³ Douglas A. Macgregor, "Breaking the Phalanx: A New Design for Landpower in the 21st Century," briefing to the School of Advanced Military Studies (Fort Leavenworth, KS, 12 August 1997).

⁴ Above the line force considerations for the Army are almost always in terms of the divisional building blocks (minus Special Operations Forces). Major decisions look at this structure without consideration of its merits, just tradition and history. For examples see Les Aspin, *Report on the Bottom-Up Review* (Washington, D.C.: Office of the Secretary of Defense, October 1993) or William S Cohen, "Report of the Quadrennial Defense Review," *Joint Force Quarterly* 16 (Summer 1997): 8-14.

⁵ Dennis J. Reimer, "Challenge and Change: A Legacy for the Future," *Military Review* 77, no. 4 (1997): 114.

⁶ Although others would argue that the delegation of authority to and through subordinate headquarters can result in greater initiative and flexibility on the battlefield. Furthermore, the appropriate span of control, determined by doctrine, technological capabilities and human limitations will play a part and will be discussed later in this paper.

⁷ Macgregor, 32.

⁸ Related debate, focusing on force structure, began with the *Bottom-Up Review* and has continued over the past few years with the Quadrennial Defense Review and the National Defense Panel. Macgregor's group structure has been debated both in and outside of the military, as well, in Richard J Newman, "Renegades Finish Last," *U.S. News & World Report* (28 July 1997): 35 and Sean D. Naylor, "A Lieutenant Colonel With a View," *Army Times* 57, no. 46 (June 9, 1997): 12-14.

⁹ This is the issue that compelled the author to research this monograph. Since the publication of Macgregor's book the author has been struck by the large numbers of senior captains and majors who are in favor of change. Not just Macgregor's proposals for change, but the Officer Personnel Management Development (OPMD) XXI, the new Officer Efficiency Report (OER), and others.

Dissatisfaction over a variety of issues appears to have made many mid-level, career-oriented officers embrace and even seek change.

¹⁰ This concept is from a Strategic Research Project conducted by Colonel John A. Bonin while at the U.S. Army War College. J. A. Bonin, "Brigades: Building Blocks for Force XXI," Strategy Research Project (U.S. Army War College, 18 April 1995). It is essentially the same concept that was one of the front runners in the Army's initial debate over which way to take the Experimental Force (EXFOR) in the future in Sean D. Naylor, "Three Options for Four Stars," *Army Times* 56, no. 12 (October 16, 1995): 12-14. See also Michael McCormick, "The Brigade Based Division: Saddling the Right Horse," Monograph (School of Advanced Military Studies, U.S. Army Command and General Staff College, 6 December 1996).

¹¹ Kevin D. Stringer, "Regional Airborne Brigades For Operations Other Than War," *Army* (September 1997): 15-18, discusses the need for regional airborne brigades for OOTW operations and William R. Spores in "The Separate Infantry Brigade: The Combat Arms Force for the National Guard," Study Project (U.S. Army War College, 1 April 1993), examines the need for separate infantry brigades in the force structure as reinforcers, etc.

¹² This concept is developed and presented in John R. Brinkerhoff, "The Brigade-Based New Army," *Parameters* (Autumn 1997): 60-72. It is rebutted in the same issue by David Fastabend, recent chief of the Field Manual 100-5 writing team in "An Appraisal of 'The Brigade-Based New Army.'" *Parameters* (Autumn 1997): 73-81. Between the two articles the reader can gain a clear understanding of this proposed concept and also see some of the primary issues between proponents and opponents of these type of proposals.

¹³ For more information on this concept see both McCormick and Naylor, cited above.

¹⁴ Macgregor, 67.

¹⁵ The basic structural designs are presented in Chapter 4 and the numbers of groups are presented in Chapter 7 of *Breaking the Phalanx* by Macgregor.

¹⁶ Macgregor, 81-82. This proposal adds strike, information support, and civil affairs/PSYOPS staff sections as permanent staff sections at this level. The group headquarters minimally requires two colonels, six lieutenant colonels, and at least six (probably twelve) majors.

¹⁷ *Ibid.*, 84.

¹⁸ Ibid., 82.

¹⁹ Ibid., 32, 69, and 227. See also Macgregor Briefing, slides 2, 4, and 8.

²⁰ Ibid., 36-38 (dominating maneuver), 86-89. See also Macgregor Briefing, slides 2-5, 26, and 29.

²¹ Ibid., 70-75. See also Macgregor Briefing, slides 3-4, 12, and 14.

²² Ibid., 194-199. See also Macgregor Briefing, slides 27 and 29.

²³ Ibid., 61. See also Macgregor Briefing, slides 29 and 30.

²⁴ Chief of Staff of the Army, General Dennis Reimer as quoted by Sean D. Naylor in "A Lieutenant Colonel With a View," *Army Times* 57, no. 46 (June 9, 1997): 13.

²⁵ This decision was announced and explained during the "How to Fight VI" Conference held at Fort Monroe in December 1995 and sponsored by General William W. Hartzog. Information on the alternatives and decision process is from a briefing presented there titled "How to Fight VI: Why We Did This, What We've Learned, Where We Go From Here (Analysis of Alternatives)," Briefing (Fort Monroe, VA: Headquarters, U.S. Army Training and Doctrine Command, 11 December 1995), slides 1-6.

²⁶ Reimer, "Challenge and Change: A Legacy for the Future," 114.

²⁷ Sean D. Naylor, "Lethal Force: EXFOR Dominates Battlefield but Tough Questions Remain," *Army Times* 58, no. 20 (December 15, 1997): 12-14.

²⁸ In fact, a senior Army leader recently posited in an informal session with students from the School for Advanced Military Studies that the force in 2025 will be essentially the same ten division force as today. The differences would be that three of the heavy divisions would be fully enhanced and digitized, the others would be modernized to a degree consistent with funding and compatibility.

²⁹ Reimer, "Challenge and Change: A Legacy for the Future," 113.

³⁰ John A. English, *On Infantry* (Westport, CT: Praeger Publishers, 1981), 224.

³¹ These operations incorporate aspects of the entire conflict environment, with the predominant characteristics of each being the defense (DESERT SHIELD), the offense (DESERT STORM and UPHOLD DEMOCRACY as planned),

stability (UPHOLD DEMOCRACY as executed), and support (secondary characteristic of UPHOLD DEMOCRACY). Field Manual 100-5, *Operations (Final Draft)*, (Washington, D.C.: Headquarters, Department of the Army, 5 August 1997), 2-1 to 2-3.

³² Most of the background information and knowledge concerning Operations DESERT SHIELD/DESERT STORM comes from the Army's official history of this conflict contained in Robert H. Scales, Jr., director, *Certain Victory: The U.S. Army in the Gulf War* (Washington, D.C.: Office of the Chief of Staff, 1993); Frank N. Schubert and Theresa L. Kraus, editors, *The Whirlwind War* (Washington, D.C.: U.S. Army Center of Military History, 1995); Richard M. Swain, *"Lucky War" Third Army in Desert Storm* (Fort Leavenworth, KS: U.S. Army Command and General Staff College Press, 1994); and Department of Defense, *Conduct of the Persian Gulf War, Final Report to Congress* (Washington, D.C.: U.S. Government Printing Office, April 1992).

³³ Robert H. Scales, Jr., director, *Certain Victory: The U.S. Army in the Gulf War* (Washington, D.C.: Office of the Chief of Staff, 1993) discusses how the Army maximized its industrial and informational advantages in defeating Iraq in Chapter 7: Continuity and Change. Macgregor also comments on this issue, 48.

³⁴ Scales, 380-382. The quoted materiel is from p. 382. See also Department of Defense, *Conduct of the Persian Gulf War, Final Report to Congress* (Washington, D.C.: U.S. Government Printing Office, April 1992), 237-238, and Frank N. Schubert and Theresa L. Kraus, eds., *The Whirlwind War* (Washington, D.C.: U.S. Army Center of Military History, 1995), 234.

³⁵ Scales, 138-141.

³⁶ The capabilities gap resulting from lengthy procurement and fielding plans was particularly noted in the area of communications. Most of the other issues where new equipment was lacking in deployed units was solved, or fielded on the spot, prior to the initiation of ground operations (especially with the fielding of large numbers of M1A1 tanks in theater). Mobile Subscriber Equipment and SINCGARS radios were fielded to relatively few units, but provided capabilities desired by all, and limited interoperability between units without extensive workarounds. See Department of Defense, *Conduct of the Persian Gulf War, Final Report to Congress* (Washington, D.C.: U.S. Government Printing Office, April 1992), 572-575 and 750. This gap also existed between the U.S. and its coalition partners, but was alleviated through the massive use of liaison teams, especially special forces with appropriate communications equipment. See the same source as above, 235-236. For further information related to this issue the military reader can reference Operation DESERT STORM Lessons Learned, Volume I, Significant Stand Alone Subjects (FOR OFFICIAL USE ONLY)

(Washington, D.C.: Headquarters, Department of the Army, 1991), I-4-5 and I-4-9.

³⁷ Scales, 389, and Department of Defense, 389-391.

³⁸ Susan Canedy, ed., TRADOC Pamphlet 525-100-1, *Leadership and Command on the Battlefield. Operation JUST CAUSE and DESERT STORM*, (Fort Monroe, VA: U.S. Army Training and Doctrine Command, 1992), cover.

³⁹ Ibid., 13, 17, 41.

⁴⁰ Field Manual 71-3, *Armored and Mechanized Infantry Brigade* (Washington, D.C.: Headquarters, Department of the Army, 11 May 1988), 1-5; Field Manual 71-100, *Division Operations* (Washington, D.C.: Headquarters, Department of the Army, 16 June 1990), 2-1; and Field Manual 100-15, *Corps Operations* (Washington, D.C.: Headquarters, Department of the Army, 13 September 1989), 2-3.

⁴¹ Field Manual 71-3, *Armored and Mechanized Infantry Brigade* (Washington, D.C.: Headquarters, Department of the Army, 8 January 1996), 3-2. Current doctrine leaves the specific numbers out when discussing span of control, this is probably due both to changes in doctrinal thought and the perceived potential benefits from computer technology. There is a limit, but no one knows what it is!

⁴² Scales, 140-141. There is a possibility that this large span of control, with too many units and things to do led to Central Command's, and General Schwarzkopf's, inability to track events and helped lead to the Franks/Schwarzkopf controversy over the seizure of Safwan on 28 February 1991. See Swain, 284-300, specifically "the difficulty that higher headquarters had in determining just what 'ground truth' looked like in detail even hours after the cessation of the offensive," on 299.

⁴³ Richard M. Swain, *"Lucky War" Third Army in Desert Storm* (Fort Leavenworth, KS: U.S. Army Command and General Staff College Press, 1994), 353-354.

⁴⁴ However, although U.S. heavy forces appear the most lethal in the world, the flip side of this issue is force protection and durability, or the ability to sustain losses and keep fighting. As U.S. forces shrink and if span of control widens, as proposed by Colonel Macgregor, what happens when the U.S. does face a capable, lethal foe? What happens when the relatively few headquarters that control many units are destroyed? While this was not an issue or lesson learned for the U.S. Army it probably was for the Iraqis. The U.S. must now worry about asymmetric threats, especially versus our highly technical and networked headquarters and systems.

⁴⁵ Department of Defense, 360-362.

⁴⁶ John A. Wickham, Jr., *Light Infantry Divisions (White Paper 1984)* (Washington, D.C.: Headquarters, Department of the Army, 16 April 1984). See also Gerald E. Thompson, "The Infantry Division (Light): Did We Read the History Book?" Essay (U.S. Army War College, 23 March 1987), 6 and Gerald R. Harkins, "Formation of the Light Infantry." Essay (U.S. Army War College, 21 March 1986), 5.

⁴⁷ Both the Chairman of the Joint Chiefs of Staff, General Powell, and the Central Command Commander, General Schwarzkopf were uneasy over the vulnerability of the 82nd Airborne Division's initial deployment to and defense in Saudi Arabia. With limited mobility and lethality it had slight hope of stopping Iraq's mechanized forces if they chose to attack even with the backing of U.S. air power. See Bob Woodward, *The Commanders* (New York: Simon & Schuster Inc., 1991), 257, 268. The military reader can also see *Operation DESERT STORM Lessons Learned, Volume II, Strategic (FOR OFFICIAL USE ONLY)* (Washington, D.C.: Headquarters, Department of the Army, 1991), II-1-4, and II-1-31 to II-1-33.

⁴⁸ Scales, 128.

⁴⁹ *Ibid.*, 374-376.

⁵⁰ Robert F. Baumann, "Operation Uphold Democracy: Power Under Control," *Military Review* 77, no. 4 (1997): 13-14, and 21. See also, Tranette Ledford who determines the mission was a qualified success in "Soldiers: Haiti Mission a Qualified Success," *Army Times* 58, no. 20 (December 15, 1997): 16.

⁵¹ For information on representative types and numbers of players, and the difficulties in dealing with them, involved in this operation see any of the following: Center for Army Lessons Learned, *Initial Impressions Volume I: Haiti, D-20 to D+40* (Fort Leavenworth, KS: U.S. Army Training and Doctrine Command, December 1994), Center for Army Lessons Learned, *Initial Impressions Volume II: Haiti, D-20 to D+150* (Fort Leavenworth, KS: U.S. Army Training and Doctrine Command, April 1995), and Center for Army Lessons Learned, *Initial Impressions Volume III: Haiti* (Fort Leavenworth, KS: U.S. Army Training and Doctrine Command, July 1995).

⁵² Information concerning the *Mount Whitney* and Army aircraft carrier operations is contained in Center for Army Lessons Learned, *Initial Impressions Volume I: Haiti, D-20 to D+40* (Fort Leavenworth, KS: U.S. Army Training and Doctrine Command, December 1994), 11-17 and 49-52. HDC information is provided in Center for Army Lessons Learned, *Initial Impressions Volume II: Haiti, D-20 to*

D+150 (Fort Leavenworth, KS: U.S. Army Training and Doctrine Command, April 1995), 41, additional praise for the *Mount Whitney* as a JTF headquarters was also contained in this volume, 181.

⁵³ Robert C. Shaw, "Integrating Conventional and Special Operations Forces," *Military Review* 77, no. 4 (1997): 37-41. This issue was also evident in operations conducted in Somalia, including the ill-fated Task Force Ranger mission on 3 October 1993. See also John A. Clauer, "Unified Effort in Support of Dominant Maneuver on the Joint Battlefield," *Marine Corps Gazette* 81, no. 10 (October 1997), 52-53, 57 who discusses command arrangements and JSOTF use and integration, as well. Colonel Clauer, USMC, contends that the relationship worked well except between the SOF and Marines vic Cap Haitian area where there were no liaison teams. What appears to be the case is that the integration between headquarters, at the component level was not a problem, but the integration at the tactical levels, where the conventional (both Army and Marine) and SOF forces interacted was lacking.

⁵⁴ Center for Army Lessons Learned, *Initial Impressions Volume II*, 134-139.

⁵⁵ John T. Fishel, "Operation Uphold Democracy: Old Principles, New Realities," *Military Review* 77, no. 4 (1997): 27.

⁵⁶ Center for Army Lessons Learned, *Initial Impressions*, 23-26, and Center for Army Lessons Learned, *Initial Impressions Volume II*, 23, 34, 37, 45, and 85-87. See also Fishel, 23.

⁵⁷ Center for Army Lessons Learned, *Initial Impressions*, 114, 132, and 136; and Center for Army Lessons Learned, *Initial Impressions Volume II*, 5 (use of Bradley Fighting Vehicles), 10 (use of the Marine Light Armored Vehicle, LAV-25), and 79 (need for rental vehicles).

⁵⁸ Although highlighting the mental aspects of agility in this section, it must be noted by the author that force structure or organization can significantly impact this mental quality, as well.

⁵⁹ Baumann, 15

⁶⁰ Lawrence A. Yates, "Military Stability and Support Operations: Analogies, Patterns and Recurring Themes," *Military Review* 77, no. 4 (1997): 55.

⁶¹ Baumann, 14-15. General William W. Hartzog also discussed this versatility in a briefing to the School of Advanced Military Studies (Fort Leavenworth, KS, 8 January 1998).

⁶² Although this is usually not the case. Almost always another, totally different unit will rotate in and assume the mission. In this operation the mission rotated between the 10th ID(L), 25th ID(L), and 2nd Armored Cavalry Regiment (ACR).

⁶³ Macgregor alludes to this issue on 73-74. Furthermore, an analysis of operations and their task organizations since JUST CAUSE, through JOINT ENDEAVOR shows that many divisional structures were deployed and employed with much of their combat power at home station (Operations JUST CAUSE, RESTORE HOPE and UNOSOM II, and UPHOLD DEMOCRACY) or were so augmented with additional forces that a corps structure may have been more appropriate (JOINT ENDEAVOR). In the first case it appears that the divisional structure was necessary to provide a general officer command in charge of the operation or to provide an ARFOR or JTF base for expansion. See Thomas Donnelly, Margaret Roth, and Caleb Baker, *Operation Just Cause: The Storming of Panama* (New York: Lexington Books, 1991), 83; S.L. Arnold and David T. Stahl, "A Power Projection Army in Operations Other Than War," *Parameters* (Winter 1993-94), figure 2; and Stanley F. Cherrie, "Task Force Eagle." *Military Review* 77, no. 4 (1997): 63-72.

⁶⁴ David L. Grange, "The Big Red One," Briefing to selected Command and General Staff College officers at Fort Leavenworth, KS, 27 January 1998.

⁶⁵ Lawrence J. Wark, "Army War Reserve-3: Prepositioned Equipment Afloat," *Infantry* 86, no. 2 (1996): 7. See also Program Objective Memorandum FY98-03, *Force Deployment & Prepositioning, Volume III* (Washington, D.C.: Headquarters, Department of the Army, June 1996), 21-25; and Field Manual 100-17-1, *Army Pre-Positioned Afloat Operations* (Washington, D.C.: Headquarters, Department of the Army, 27 July 1996), B-3 to B-6.

⁶⁶ Macgregor, 25.

⁶⁷ Carl E. Vuono, "Desert Storm and the Future of Conventional Forces," *Foreign Affairs* 70, no. 2 (1991): 52. In this article the former Chief of Staff of the Army posits the four principal qualities of the future conventional force as being versatility, deployability, lethality, and expansibility, see p. 58.

⁶⁸ Michael Howard, "Military Science in an Age of Peace," *RUSI, Journal of the Royal United Services Institute for Defence Studies* 119 (March 1974): 7. The actual quote is as follows: "Still it is the task of military science in an age of peace to prevent the doctrines from being too badly wrong." This is an excellent talk that emphasizes the difficulties in getting doctrine, organizations, and technology to balance in-between wars. The problem is balancing and identifying operational requirements, technological feasibility, and financial capabilities, while understanding that military science is not really a science and

dealing with a rigid, structured, often sedate bureaucracy. However, as he notes this problem is the same for all armies.

⁶⁹ John M. Shalikashvili, *National Military Strategy of the United States of America* (Washington, D.C.: Joint Chiefs of Staff, September 1997); William J. Clinton, *A National Security Strategy for a New Century* (Washington, D.C.: U.S. Government Printing Office, May 1997); and Les Aspin, *Report on the Bottom-Up Review* (Washington, D.C.: Office of the Secretary of Defense, October 1993). The *Joint Strategy Review* is a classified study that leads to the Chairman's Guidance. It alternates between a mid-term and a long-term examination of the strategic environment and requirements for the U.S. military, and when sufficient change occurs, is the genesis for revising the NMS.

⁷⁰ Shalikashvili, *National Military Strategy*, 1-2, 7.

⁷¹ Ibid., 2-3. Although the Army still focuses on its warfighting mission since that is considered its reason for being and since it is considered the most difficult and important task. See Reimer, "Challenge and Change: A Legacy for the Future," 112, where he states that: "The Army's fundamental purpose is to fight and win our nation's wars as part of a joint team. The NMS requires the Armed Forces to be able to fight and win two major theater wars."

⁷² Shalikashvili, *National Military Strategy*, 8. Many analysts and defense studies believe that such a threat, in the form of a peer competitor, is at least ten to twenty years distant. Some studies, such as the Institute for National Strategic Studies, *Project 2025* (Washington, D.C.: National Defense University, 6 November 1991), 26, posit up to 30 or 40 years for the reemergence of a peer competitor, or real threat to U.S. military might. It must also be noted that this study was a major contributor to the results of the *Joint Strategy Review* of 1993 and thus, also played a role in the thinking behind the *Bottom-Up Review*, and ultimately the previous *National Military Strategy*. However, most current writing is of a more cautious nature predicting a possible peer competitor, or at least niche competitors, in the next ten to twenty years. Either way there is minimal head-to-head threat foreseen to the U.S. military in the near- to mid-term. See also "The Future of Warfare," *The Economist* (March 8 - 14, 1997): 24, that does not envision the U.S. losing its large lead in military supremacy anytime soon unless a significant change occurs in the world environment. General Shalikashvili, the Chairman of the Joint Chiefs of Staff, also addresses this issue in "A Word from the Chairman," *Joint Force Quarterly* 14 (Winter 1996-1997): 1, 4. In this article he discusses the *Joint Strategy Review* of 1996 that found that "until 2010 the Nation will continue to confront a range of threats—from terrorists to rogue states with weapons of mass destruction to potent regional powers. Beyond 2010, we may even face peer competitors or new global powers." In short, no peer competitor threat until after 2010.

⁷³ These facts and figures are taken from a pamphlet published by the Program Analysis and Evaluation Directorate, *America's Army... Projecting Decisive Power Into the 21st Century* (Washington, D.C.: Headquarters, Department of the Army, September 1995), 12. This pamphlet is published and distributed to key DoD and Congressional decisionmakers to ensure they receive the relevant information on how and why the Army has changed since 1989.

⁷⁴ William S. Cohen, "Report of the Quadrennial Defense Review," *Joint Force Quarterly* 16 (Summer 1997): 11.

⁷⁵ National Defense Panel, *Transforming Defense: National Security in the 21st Century* (Washington, D.C.: U.S. Government Printing Office, December 1997).

⁷⁶ Vuono, 58.

⁷⁷ Dennis J. Reimer and Togo D. West, Jr., *Force of Decision ...Capabilities for the 21st Century (White Paper)* (Washington, D.C.: Headquarters, Department of the Army, 15 April 1996), 13.

⁷⁸ Shalikashvili, *National Military Strategy*, 20.

⁷⁹ See National Defense Panel, ii-iii and 46-47. See also Aspin, 19-21. This requirement goes beyond the improvements to the nation's strategic lift capabilities envisioned by the *Bottom-Up Review* of a few years ago.

⁸⁰ Shalikashvili, *National Military Strategy*, 4; National Defense Panel, iii and 45; Cohen, 9.

⁸¹ The directly quoted material is from GEN William W. Hartzog's cover letter to TRADOC Pamphlet 525-5, *Force XXI Operations* (Fort Monroe, VA: Headquarters, U.S. Army Training and Doctrine Command, 1 August 1994).

⁸² TRADOC Pamphlet 525-5, *Force XXI Operations* (Fort Monroe, VA: Headquarters, U.S. Army Training and Doctrine Command, 1 August 1994). See pages 2-9 for extended battlespace, 3-19 for tempo, and 4-2 for versatility (directly quoted material) and Force XXI Operations.

⁸³ *Ibid.*, 3-1 to 3-3.

⁸⁴ *Ibid.*, 3-3 to 3-10.

⁸⁵ Dennis J. Reimer, *Army Vision 2010* (Washington, D.C.: Headquarters, Department of the Army, 1997), 1.

⁸⁶ Ibid., 5, 11-12, and 18.

⁸⁷ Field Manual 100-5, *Operations (Final Draft)*, 1-1 to 1-2.

⁸⁸ Ibid., 3-1 to 3-3.

⁸⁹ Ibid., Chapters 17 to 19, and Chapter 7.

⁹⁰ Gordon R. Sullivan and Togo D. West, Jr., *Decisive Victory: America's Power Projection Army (White Paper)* (Washington, D.C.; Headquarters, Department of the Army, October 1994), 17. See also "The Future of Warfare," *The Economist* (March 8 - 14, 1997): 24; and Amy McAuliffe, "Technology: Changing the Way the Army Does Business," *Military & Aerospace Electronics* 7, no. 2 (February 1996): 24-25.

⁹¹ Steven Metz, "Strategic Horizons: The Military Implications of Alternative Futures," The Army After Next Project (U.S. Army War College, 7 March 1997), 17. See also Macgregor, 60.

⁹² Although the process, embodied by Force XXI, is more circular with experimentation results and AWE insights feeding back into both emerging doctrine and evolving Force XXI concepts (to include the Army After Next).

⁹³ See the following: Sean D. Naylor, "Lethal Force: EXFOR Dominates Battlefield but Tough Questions Remain," *Army Times* 58, no. 20 (December 15, 1997): 12-14; Jim Caldwell, "TRADOC Commander Reveals Some Results of Force XXI AWE," *TRADOC News Service* (22 April 1997): 29-30; and William W. Hartzog, *Land Combat in the 21st Century*, (Fort Monroe, VA: Headquarters, U.S. Army Training and Doctrine Command, 1 August 1996), 6-15.

⁹⁴ William W. Hartzog, Briefing to the School of Advanced Military Studies (Fort Leavenworth, KS, 8 January 1998).

⁹⁵ Macgregor, 71-75 and 82-84.

⁹⁶ Ibid., 173 and 212.

⁹⁷ For the reasoning behind the formation of the light infantry division see Wickham, referenced above.

⁹⁸ Macgregor, 194-199. His proposal looks at a minimal manpower savings of over 10,000 soldiers and an annual savings of over \$1.1 billion dollars annually in operations and maintenance cost.

⁹⁹ Ibid., 195-197.

¹⁰⁰ Ibid., 200-214. See also Sean D. Naylor in "Army Trades Off AGS System for Cash," *Army Times* 56, no. 28 (February 5, 1996): 3. The Army canceled the system in order to save over a billion dollars in future procurement costs. Furthermore, this billion dollars represents the purchase of 181 systems to outfit the 82nd Airborne Division and the 2nd ACR. Colonel Macgregor's plan requires the procurement of 252 of these systems (as well as 252 LAVs). For more information on the AGS cancellation see Naylor, "Goodbye, Sheridan," *Army Times* 57, no. 9 (September 23, 1996): 14-16. See 151-154 for the following discussion on the cycle system.

¹⁰¹ Naylor, "Lethal Force: EXFOR Dominates Battlefield but Tough Questions Remain," 12.

¹⁰² Macgregor, 195, and Naylor, "Lethal Force: EXFOR Dominates Battlefield but Tough Questions Remain," 12.

¹⁰³ For current shortages in majors and lieutenant colonels the author references information gathered by the OPMS XXI Precursor Study Group and presented in the following briefings both given by Major General David H. Ohle, "OPMS XXI TF IPR for CSA" (Washington, D.C.: OPMS XXI Task Force, 7 October 1996) and "Presentation to Senior Leader Conference" (Washington, D.C.: OPMS XXI Task Force, 18 October 1996).

¹⁰⁴ A rough estimate, made by the author, would increase major and lieutenant colonel requirements in the operational force by a bare minimum of 20 for each grade. This is a relatively significant increase due to the shortfalls already existing. This estimate was made by comparing the number of current staff officers in the ranks of major and lieutenant colonel in the equivalent of 30 brigades and 10 divisions (generic maneuver units) to the estimated staff requirements of 26 groups. It does not include the estimate of the additional majors and lieutenant colonels that will probably be required to round out the corps/JTF staff, especially due to the addition of two additional major general positions.

¹⁰⁵ William G. Pierce, "Span of Control and the Operational Commander: Is It More than Just a Number?" Monograph (School of Advanced Military Studies, U.S. Army Command and General Staff College, 8 May 1991), 17-19.

¹⁰⁶ Naylor, "Lethal Force: EXFOR Dominates Battlefield but Tough Questions Remain," 14.

¹⁰⁷ George S. Patton, Jr., *War As I Knew It* (New York: Houghton Mifflin Company, 1995), 357.

¹⁰⁸ Cherrie, 66.

¹⁰⁹ Macgregor discusses numbers of systems on 197-199. The elimination of the fourth maneuver company from heavy battalions is reported by Naylor, "Lethal Force: EXFOR Dominates Battlefield but Tough Questions Remain," 12.

¹¹⁰ Macgregor, 67. See also Jonathan M. House, "Toward Combined Arms Warfare: A Survey of 20th-Century Tactics, Doctrine, and Organization," Research Survey No. 2. (Fort Leavenworth, KS: U.S. Army Command and General Staff College, Combat Studies Institute, August 1984), 188-189.

¹¹¹ See Martin Van Creveld, *Command in War* (Cambridge, MA: Harvard University Press, 1985), 86-88 and 96-102. In these sections Van Creveld supports Macgregor's argument by showing how Napoleon was able to maximize his agility with a large span of control. However, Van Creveld later tempers this conclusion by citing that Napoleon's success was not only a factor of a large span of control and organizational aspects which speeded communications, but due to Napoleon's genius, his use of directed telescopes, and his decentralized command procedures.

¹¹² Macgregor, 73-74.

¹¹³ *Ibid.*, 77-78.

¹¹⁴ *Ibid.*, 85.

¹¹⁵ Bonin, "Brigades: Building Blocks for Force XXI," Naylor, "Three Options for Four Stars," and McCormick, "The Brigade Based Division: Saddling the Right Horse."

¹¹⁶ It is obvious that the Army understands and practices the requirement for salesmanship of new ideas both externally and internally to the organization. This is seen by the methodical, evolutionary, and publicized approach that was adopted by General Sullivan in beginning Force XXI and that is continued by General Reimer in Force XXI, as well as OPMS XXI, the new FM 100-5, the new OER, and other ongoing changes.

¹¹⁷ All definitions with page numbers following them in parenthesis are taken from Chapter 1, Operational Terms, of Field Manual 101-5-1, *Operational Terms and Graphics* (Washington, D.C.: Headquarters, Department of the Army, 30 September 1997). The corresponding page numbers follow each definition in parenthesis. Exceptions are footnoted, as appropriate.

¹¹⁸ This is the start of the definition of a corps taken from Field Manual 100-15, *Corps Operations* (Washington, D.C.: Headquarters, Department of the Army, 1 June 1996), 1-1.

¹¹⁹ Macgregor, 82-86.

¹²⁰ Adapted from the definitions of the Dynamics of Combat Power in Field Manual 100-5, *Operations*, (Washington, D.C.: Headquarters, Department of the Army, 14 June 1993), 2-10.

¹²¹ This concept is an adaptation of the CSS Manning Function and for use in this monograph entails the use and availability of existing manpower to fill key positions in existing and proposed organizations.

¹²² Adapted from the discussion on RMA in TRADOC Pamphlet 525-5, *Force XXI Operations*, (Fort Monroe, VA: Headquarters, U.S. Army Training and Doctrine Command, 1 August 1994), 2-7 to 2-8.

¹²³ This definition is adapted from the definition of control that is inherent in battle command in Field Manual 71-100, *Division Operations* (Washington, D.C.: Headquarters, Department of the Army, 28 August 1996), 3-1.

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